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THE ONCE AND FUTURE AIR SUPPORT OPERATIONS CENTER:  
A CRITICAL REFLECTION ON DEVELOPMENTS IN AIR-TO-  
GROUND COMMAND AND CONTROL

by

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## **PREFACE**

In January of 2013, I arrived at the 14th Air Support Operations Squadron (ASOS) and the commander told me that I would be responsible for building the Air Support Operations Center (ASOC) within the unit. At the time, I did not even know what an ASOC was; let alone how to build it. As I sought to understand what this responsibility might entail, I found very little information about the history of the ASOC or why this capability was even being built in my unit. Having the 682nd ASOS, a squadron dedicated to the ASOC mission, right across the street from my squadron was invaluable in learning what I needed to know. Nevertheless, I would have liked to have had a coherent history of the ASOC that provided a frame of reference for my charge and a guide for my decision-making. This paper is an effort to provide to others what I did not have when I was first told to build an ASOC, and to pass along some of the insights I have gained from study and experience. It is my hope that in so doing, the ASOC will become a better organization, and more importantly, that the U.S. military will become a better joint force as a result.

I am indebted to my instructors, Dr. Robert Farkasch and Dr. Richard Smith, for their guidance through the research process, and to my fellow students for their inputs. I would also like to thank my father, Dr. Rod Spidahl, for his editing assistance and the wisdom imparted from his own research experience. I cannot thank Natalie Koch enough for her invaluable editing. I am also thankful for the support of Karl Bruce. I am grateful for the help of the Air Force Historical Research Agency, who furnished much of the historical support needed to complete this project. I am further indebted to the members of the 14th ASOS and 682nd ASOS over the past three years who have showed me what it is to be part of the air-to-ground system. Finally, for the support of my wife, family, and extended family, I am forever grateful.

## **ABSTRACT**

In response to U.S. Army reorganization and lessons learned from Operation Anaconda in Afghanistan, the Air Force and Army agreed to realign the Air Support Operations Center (ASOC) with the Army division instead of the corps. Implementation has since stalled because of funding reductions and command-level disagreements. Squadrons directed to realign lack guidance about how this is to be accomplished, often resulting in unit level company grade officers executing as they see fit. These officers are missing a sufficient frame of reference to help them understand how to realign or why it is being directed. Additionally, each Army division has a unique mission that the ASOC must be molded to fit, but the ASOC remains a one-size-fits-all organization based on corps alignment. A frame of reference is needed to make informed decisions at all levels. A cost-benefit analysis is necessary to determine whether realignment is economically viable, even if it remains the best decision for joint interoperability. This research supplies a practical frame of reference through the lens of a coherent and critically analyzed history of the ASOC, focusing on the timeless principles that are required for optimal execution. The principles identified are flexibility, proximity, and communications. Whether the Air Force continues to build a division aligned ASOC, or withdraws it to the corps, these historically-derived principles should be applied to its design.

## Introduction

*Those who cannot remember the past are condemned to repeat it. -George Santayana*

*The history of close air support since World War I has been marked by tragedy – lives lost, unduly protracted conflict, and victory deferred – because both air and ground officers have too often failed to benefit as they might from history... -Maj Gen (ret.) I. B. Holley Jr., Ph.D*

### A Brief Description of the ASOC Problem

Command and Control (C2) of Close Air Support (CAS) has a long history of learning, and subsequently forgetting, the principles of effective implementation. Since World War I first required management of offensive air power in close proximity to friendly ground forces, the military components have debated over the methods of CAS management in each successive conflict. Near the end of each of these conflicts, an effective organization has typically been achieved; one that largely conforms to the pre-war doctrine and the organization in place at the end of the previous conflict. At the center of this recurring debate is the Air Support Operations Center (ASOC). The ASOC is the organization responsible for providing C2 of the air commander's assets that have been allocated to support the mission of the ground commander. It has gone by many names and taken a variety of forms over the years, but its mission and the general principles that make for effective execution of that mission remain the same. In the last 13 years, Army restructuring has caused Air Force leaders to reevaluate where the ASOC should be aligned in the Army's new organization. Planning shortfalls in Operation Anaconda led both services to reexamine how the ASOC should integrate in joint mission execution. The realignment plan, and subsequently the joint integration process, has stalled because of high costs coupled with shrinking budgets. Contributing to slowed implementation is the fact that the current ASOC is not designed for the specific mission needs of all the units it is now meant to



support. These challenges call for an examination of ASOC history to provide clear guidance for leaders designing the contemporary ASOC.

### **Research Question**

What does the historical interaction between the doctrine and practice of air-to-ground command and control reveal about the Air Support Operations Center? Can enduring principles be identified that should be applied to its design?

### **Thesis**

An examination of close air support command and control history since World War I will reveal that flexibility, proximity, and robust communications are critical to fielding an effective Air Support Operations Center.

### **Summary Argument**

The experiences of several different nations in multiple wars and locations led to similar developments in CAS C2 doctrine. A variety of experiences in World War II demonstrated both effective and ineffective execution of CAS C2. During the Korean War, air-to-ground C2 doctrine was again a point of contention between the Army and the Air Force, but World War II doctrine was eventually reaffirmed by experience. The Vietnam conflict saw continued disagreement between the services along the same fault lines, and doctrine was once again reaffirmed with a few minor adjustments. Conflicts in the Middle East further demonstrated the need for flexible air-to-ground C2. U.S. Army reorganization called into question ASOC alignment and organization in relation to the Army. Operation Anaconda illuminated shortfalls in U.S. military joint interoperability. Diminishing budgets contributed to stalling ASOC reorganization plans. History demonstrates that a close working relationship between the air and

ground services – almost always including collocation – results in more effective joint execution than if the services are not in close proximity to each other. Multiple clear means of communication between the ASOC and the aircraft, subordinate Tactical Air Control Parties (TACPs), and liaison organizations are critical to smooth operations. A clear chain of command and distribution of responsibilities are also important for effective CAS C2, although an unambiguous U.S. military chain of command rarely exists in the history of 20th and 21st century conflicts. The ASOC must be designed to be inherently flexible because it rarely operates the same way twice. There is always tension over control of assets between the air and ground services, and the ASOC operates at the intersection of this tension. Because the ASOC operates at the intersection of the air and ground services, it should be leveraged as the catalyst for truly effective joint interoperability.

## **Framework and Roadmap**

The framework for this paper is the chronological pattern for qualitative research because it intends to reveal the history of the ASOC in order to understand the present and shed light on the future.<sup>1</sup> The qualitative method was chosen because the writer seeks to understand why doctrine and practice in the area of air-to-ground command and control developed as it did. The research begins with an explanation of the present day ASOC and the challenges it currently faces, giving the reader a frame of reference for the ensuing analysis. Next, the research examines the history of the ASOC chronologically to determine how and why it became the organization that it is today. After tracing ASOC history from World War I to the present, the analysis identifies that the principles of flexibility, proximity, and communications are central to creating an effective ASOC. The analysis further suggests how these principles can be combined in the design of the future ASOC and what is required to enhance and sustain its capability.

Finally, the research concludes by recommending actions that can be taken to strengthen the air-to-ground command and control agency, highlighting areas for further research, and suggesting that improving the ASOC can lead to more effective U.S. military joint interoperability.



## Background

To examine history with the intent of providing guidance on a current structure, it helps to first understand what that structure is in the present. It is therefore appropriate to begin with an explanation of what the ASOC is now, to provide a frame of reference for its historical study.

### The Contemporary ASOC

Contemporary joint doctrine defines the ASOC as “the primary control agency of the Tactical Air Control System for the execution of airpower in direct support of land operations.” It is an extension of the Air Operations Center (AOC) – the principle organization for the command of airpower – and its purpose is to “coordinate and direct air support for land forces.”<sup>2</sup> According to Air Force Instructions (AFI), the ASOC is normally located with “the senior Army tactical echelon,” which typically entails collocation with the senior tactical Army commander.<sup>3</sup> Nevertheless, the ASOC remains in the Air Force operational chain of command. In this way, the ASOC interfaces directly with the Army operational decision-makers to provide air support to those ground elements that need it most, while maintaining control over the air assets by those who understand airpower and know how best to manage it. In practice, the air commander allocates a certain number of aircraft to be used in support of ground forces on any particular day. These aircraft are managed real-time by the ASOC and may be directed to support preplanned requests for airpower or diverted to support requests that could not be planned in advance, known as *immediate* requests. Preplanned requests are those sent up the chain of command prior to execution of the Air Tasking Order (ATO), usually more than 24 hours in advance. Immediate requests should not be confused with emergency requests, although they

can be (and often are) concurrent. An immediate request simply denotes a request that did not meet the deadline to qualify as a preplanned request.

An effective ASOC maintains constant awareness of the battlespace (both ground and air) assigned/delegated to the ground commander, sustains continuous communication capability, and manages a real-time common operating picture (COP). The ASOC also retains awareness of asset availability and location, is able to quickly apply ground commander priorities to air support capability, and can swiftly deconflict airspace in response to a variety of threats to aircraft (including friendly artillery). Fully manned, the ASOC operations component consists of three teams of nine Airmen each, although this complement can be tailored to meet unique mission requirements. The team includes three officers, five enlisted Airmen, and one Intelligence member (officer or enlisted). Team duty positions encompass the following responsibilities:

- The Senior Air Director (SAD) is the officer in charge of the crew and the primary liaison to both the ground unit and the AOC.
- The ATO Manager (ATOM) (officer) tracks the theater air assets and makes recommendations about which assets to move to best support the ground unit.
- The Airspace Manager (ASM) (officer) manages airspace changes and deconflicts aircraft from surface fires.
- The Crew Superintendent (often called Senior Air Technician (SAT)) is the senior enlisted Tactical Air Control Party (TACP) and oversees technical execution of crew duties.

- The JARN Voice Operator (1C4 Air Force Specialty Code (AFSC)) is responsible for the Joint Air Request Net (JARN) and the primary voice liaison to the Tactical Air Control Parties (TACP) in the field.
- The JARN Digital Operator (or Interface Control Technician (ICT)) (1C5 AFSC) manages the datalink picture (a visual digital depiction of the battlespace) and is the ASOC's datalink liaison.
- The Procedural Controllers (PC) (1C5D AFSC) are two Weapons Directors who control aircraft within the ASOC's assigned airspace. Typically one manages inbound aircraft and the other manages outbound aircraft and takes inflight reports.
- The Intelligence Duty Officer/Technician (IDO/T) maintains intelligence liaison with Army and Air Force intelligence channels, and provides a broad range of intelligence support to the ASOC.<sup>4</sup>

### **The ASOC Dilemma**

In 2002 and 2003, two events took place that had a profound effect on the ASOC. Operation Anaconda highlighted the need to improve communication between the Army and Air Force,<sup>5</sup> and the Army began implementing an extensive restructuring plan.<sup>6</sup> The combined impact was that Operation Anaconda elevated the importance of the ASOC as a focal point for service integration, while restructuring created ambiguity about where and how the ASOC should integrate in the Army's new organization. Understanding the intricacies of this problem requires some knowledge of the ASOC and the Army's force restructuring. In practical terms, the ASOC is the Air Force unit tasked with control of air power in support of land forces.<sup>7</sup> Normally attached to the senior Army headquarters unit directly involved in current operations, the ASOC works to meet the ground commander's objectives by directing aircraft in support of

his priorities. The skill and design of the ASOC will determine how quickly soldiers on the battlefield get air support when they need it most. The Army's force structure change, often referred to as "modularity," is meant to create a flexible and mobile force more appropriate for current demands than the previous Cold War-focused structure.<sup>8</sup> Modularity makes the brigade (3000-5000 soldiers) the basic building block of the Army instead of the much larger division (10,000-18,000 soldiers or 3 brigades).<sup>9</sup> In the Army's former structure, the corps (made up of 2-5 divisions) was the senior headquarters where the ASOC integrated. In the modular structure, the division is usually the senior tactical headquarters.<sup>10</sup> Because of this, the Army and Air Force agreed to align the ASOC with the division instead of the corps. By 2015, the plan was to have increased the total number of aligned ASOCs from six to 10, and locate these ASOCs with their aligned divisions by incorporating them into the Air Force air support units (squadrons of 100-200 Airmen) already in place with each division.<sup>11</sup> As of this writing, implementation had not yet reached 50%.

Since implementation began, ASOC realignment has faced mounting obstacles and delays. One obstacle at the squadron level is that in spite of the plan to support the division, the ASOC remains designed for the corps. Because divisions, more pointedly than corps, are designed with specific mission specialties, units have struggled to determine how to match their aligned ASOCs with the unique mission of each division. Air Force instructional documents have not caught up to this change, resulting in squadrons attempting to match new requirements to outdated directives. Another obstacle has been the effect of government sequestration.<sup>12</sup> Potential budget cuts were not part of the calculations when the decision was made to increase aligned ASOCs by 80% and move them to new locations. When asked what he thought of the Division ASOC in July of 2014, then outgoing Commander of Air Combat Command (ACC),

General Mike Hostage, stated that it was a “train-wreck” because he considered it unaffordable in the current budget environment.<sup>13</sup> The impact on the ASOC has been slowing implementation as leaders attempt to find a solution or focus their attentions on other concerns.

The ASOC needs clear direction. Indecision costs the Air Force money and time as units continue working to implement a plan that is considered unsupportable by many leaders. A new affordable plan that meets mission requirements and enhances joint integration should be formulated, implemented, and sustained. For such a plan to be created, planners must have a clear understanding of what the ASOC is, its purpose, and the principles required to build an effective mission capability. Truly understanding the ASOC requires a combined knowledge of its history and doctrine, or the military risks repeating the mistakes of the past.<sup>14</sup> Doctrine is readily available, but a coherent and up-to-date history does not exist. This research will supply a critical history of the ASOC and a practical frame of reference on which to base decision-making about its future.



## ASOC Development and History

The roots of air-to-ground command and control reach back to World War I. In the latter part of the war, the Germans identified several enduring requirements for effective close air support (CAS) command and control (C2) in an instruction manual entitled *The Employment of Battle Flights*. *Battle flights* were aircraft and missions designed specifically for attack against enemy troops, akin to CAS or Interdiction in today's U.S. doctrine. At the time, the German Army controlled air operations. To facilitate C2, airports were to be located near the headquarters they were supporting and have direct telephone communication with them. The instructions outlined methods of communicating orders to both airborne and ground alert aircraft and stressed that for speed of issuing of orders, aircraft should "receive instructions directly from the Corps," rather than being attached to a division (though circumstances could dictate otherwise). The orders were to be detailed and the airmen updated constantly. This instruction also noted that battle flights should "not be distributed singly over the whole front of attack," and that due to limited aircraft, lower priority battle areas must be prepared to accept a lack of air support.<sup>15</sup> *The Employment of Battle Flights* reflected the importance of air arm proximity to the supported ground arm and the vitality of clear and expeditious communications. It also stressed the importance of centralized command, unity of effort, and quick response to the effective application of tactical airpower. German tactical success compared to the lesser success of the British was a testament to the validity and durability of the principles represented by this instruction.<sup>16</sup> These principles and techniques foreshadowed what was to become common practice, and subsequently doctrine in the future of CAS command and control.

## **British Experience in East Africa during World War II**

In World War II, the British learned and refined the lessons that the Germans learned in World War I. Air Commodore Raymond Collishaw's experience in Africa in the early years of World War II set the stage for future CAS C2 air doctrine, and is therefore worthy of consideration. At the beginning of hostilities, the Royal Air Force (RAF) in East Africa was outnumbered in excess of three to one by the Italian Air Force. Even so, Collishaw's close relationship, coordination, collocation, and planning with the ground commander, Lieutenant General Richard O'Connor, as well as his offensive-mindedness and creativity, helped the British forces advance 500 miles and defeat a force seven times its own size. Contributing to Operation Compass's success were the RAF's air-to-ground attacks on a variety of Italian targets, which led the Italian Air Force to establish defensive patrols over ground units. The air umbrella established by the Italians had little tactical benefit; but resulted in heavy aircraft maintenance costs, crew fatigue, and decreased offensive use of Italian airpower.<sup>17</sup> By contrast, Operation Battle Axe, conducted by the British to regain territory lost to Erwin Rommel's German forces shortly after the successful Operation Compass, was a disaster. In Battle Axe, Collishaw did not have the same effective working relationship with his newly arrived Army counterparts that he had enjoyed during his previous successes, and it showed in both the planning and execution of the operation. Poor tactical teamwork, including ineffective passing of intelligence from air personnel to ground personnel and uncoordinated procedures for communicating ground positions to airborne platforms, was the result. Much to Collishaw's dismay, he was forced to support the British Army commander's insistence on using aircraft as a protective air umbrella over their advancing troops instead of freeing the British flyers to attack German targets; using the same tactic that the Italians had used to their own detriment in Operation Compass. German

reports later indicated that what little British air had been employed against German support echelons had been effective.<sup>18</sup>

Contrasting Operation Battle Axe with Operation Compass lends credence to several of the principles of CAS C2 that the Germans had already identified in World War I. Close relationships between air and ground commanders throughout the planning and execution of an operation increases the likelihood of success. Clear and effective communication methods and procedures must be maintained throughout CAS employment. Using attack aircraft simply as an umbrella for ground troops instead of taking advantage of their flexibility to attack prioritized targets is a poor use of airpower, regardless of whether or not the ground commander has a proclivity to use air support in this way. World War II campaigns would continue to demonstrate these basic principles and ultimately led to their codification as doctrine.

### **British Doctrine**

As World War II wore on, the British established a system for managing close air support based in part on their experience in Africa and exercises conducted for this purpose. Their system included an organization called *Close Support Bomber Control* that was placed in close proximity to the command it was meant to support. It was designed to field and process requests for air. Close Support Bomber Control included both air force and army officers, and worked with subordinate elements called “tentacles” to provide the necessary communication and execution. General Henry “Hap” Arnold, Commanding General of the Army Air Forces (AAF), learned of these methods in April of 1941 and implemented some of them in U.S. military testing later that same year. The U.S. Army named the organization for managing air requests *Air Support Control*. Subsequent testing of their newly developed system found that “simple,

prompt communications” were central to the success of close air support managed by Air Support Control.<sup>19</sup>

### **Field Manual 31-35, *Aviation in Support of Ground Forces***

The following year, Field Manual (FM) 31-35, *Aviation in Support of Ground Forces*, doctrinally established Air Support Control as the forerunner to what would eventually become the ASOC. The manual explained that if necessary, air units could be tasked to directly support specific Army units (normally expected to be a corps, but could be placed at the division level as well). These air units would still be subordinate to the *Air Support Command* (similar to today's Air Operations Center (AOC) where the air commander executes his mission, except that this mission was focused specifically on the air-to-ground effort), that was in turn subordinate to an Army headquarters (expected to be a numbered army, a level situated above corps). In this case, however, an Air Support Control was to be set up at the command post of the supported unit to facilitate requests for support and mission assignments to the supporting air unit.<sup>20</sup> Figure 1 depicts how Air Support Control was to integrate in the air-to-ground system, as designed by FM 31-35. The manual called for Air Support Command to be collocated with the overall ground commander and for liaisons from both services to be continually present at both locations. Requests for air support were to be channeled from units where “air support parties” were located, approved by the ground commander at each level before proceeding to the next, and up to Air Support Control who had the authority to task and direct aircraft, whether they were airborne or still on the ground. There could be multiple Air Support Controls and these could even be subordinated to each other. The ground commander held the ultimate control of all air resources and how they were to be tasked, although what specific aircraft was to service a target and how that target should be serviced was left to the air support command elements.

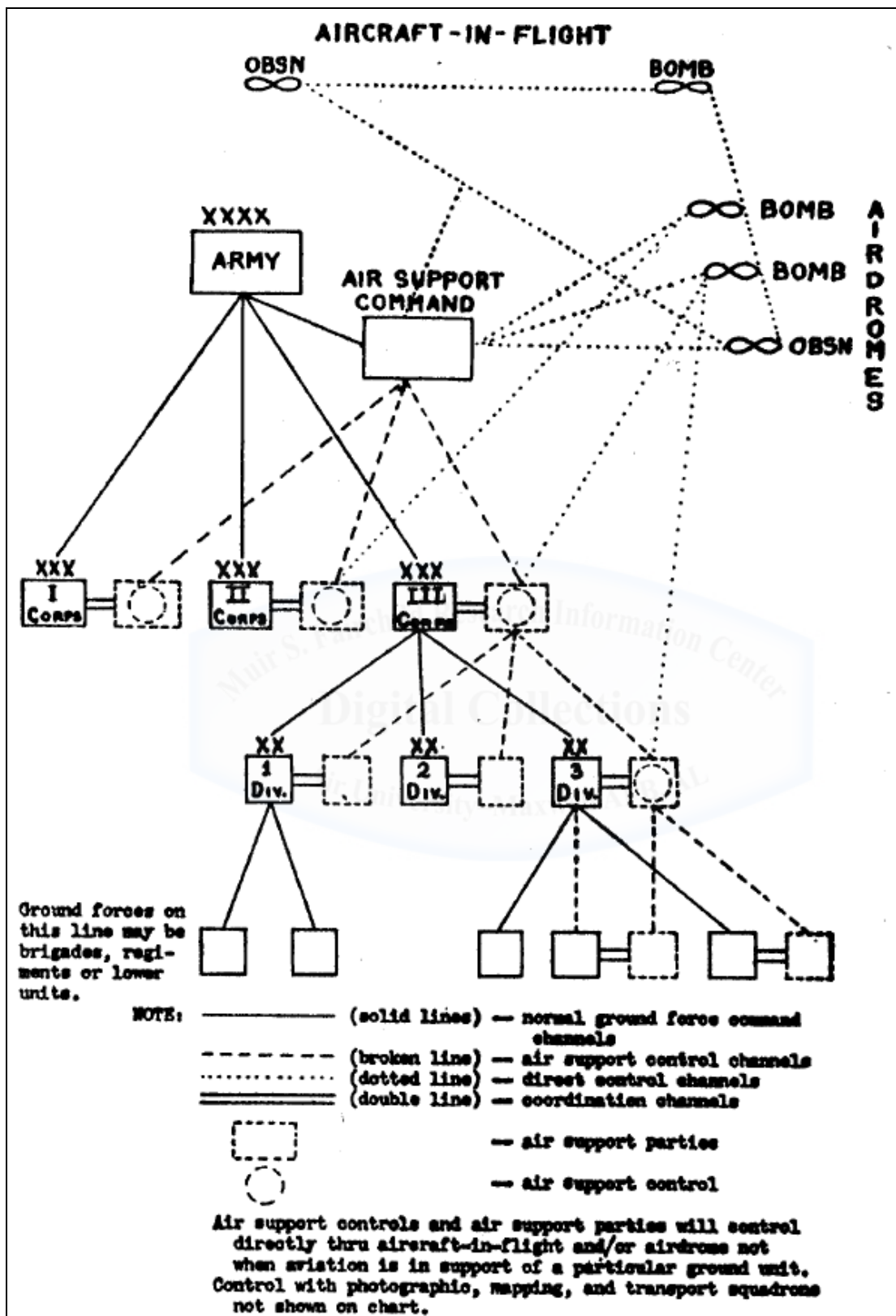


Figure 1. Tactical Air Control doctrinal design in 1942. (Reprinted from War Department Basic Field Manual (FM) 31-35, Aviation in Support of Ground Forces, 9 April 1942, 4)

The ground commander and air commander would jointly evaluate each request, but the final decision was up to the ground commander. Air Support Control was to inform the requesting ground party of the final decision and why it was not supported, if that was the decision.<sup>21</sup> FM 31-35 provided an initial doctrinal framework for the employment of airpower in support of ground units, but as historian David Syrett notes in his essay on CAS in the Tunisian Campaign of World War II, the actions of the air arm “provide a much clearer view of the situation than do the field manuals” and that “the AAF conducted operations according to its own concept of air power.”<sup>22</sup>

Ground commander actions likely contributed to AAF disinterest in the doctrinal framework, however, and demonstrated the fundamental differences between the air and ground views on the appropriate use of airpower. In one instance from January 1943, General Spaatz, then commander of Allied Air Forces, found that the II Corps ground commander (with doctrinal control of the operation’s Air Support Command) in Africa had refused air support to free French forces under direct attack because American forces needed the support. As it turned out, the support provided was an air umbrella to a force that was not in contact with the enemy. In spite of General Spaatz’s orders to provide support to these French forces, similar decisions on the use of airpower continued to be implemented.<sup>23</sup> These situations where air power was “frittered away in petty fighting,” to use General Arnold’s oft repeated phrasing from an address at the U.S. Army War College in 1937, fed the belief among members of the air arm that air power must be managed by airmen for it to be used appropriately.<sup>24</sup>

### **Kasserine Pass**

The battle at Kasserine Pass may have been the perfect storm that brought the winds of change to U.S. Army air doctrine. Fought while the Allies were in the midst of extensive

command reorganization,<sup>25</sup> with United States soldiers that were green and relatively poorly trained,<sup>26</sup> and an Air Force that was testing its untried doctrine in Africa,<sup>27</sup> it is perhaps little wonder that the battle turned out as badly as it did for U.S. forces. It would be no surprise if such an obvious failure made changes easier to implement in its aftermath. Indeed, change came relatively quickly as updated doctrine was being presented while the battle at Kasserine Pass was still ongoing. At a military conference in Tripoli during this time, British general Bernard Montgomery presented his *Notes on High Command in War*. These notes were based on previous British experiences in Libya. With the support of Air Vice-Marshal Arthur Coningham, Montgomery noted that the chief advantage of airpower was its flexibility, that airpower should be centralized and commanded by an airman, and that the army and air arms should work and plan in close proximity to achieve the greatest effect.<sup>28</sup> Montgomery's comments were accepted by the highest levels of U.S. military leadership.<sup>29</sup> In the aftermath of Kasserine Pass, General Eisenhower directed that they be the doctrinal basis of airpower for the rest of the campaign. Later, they would become the foundation of U.S. Army Air Force (AAF) doctrine at large.<sup>30</sup>

### **Field Manual 100-20, *Command and Employment of Airpower***

Only five months after the battle at Kasserine Pass and General Montgomery's comments on airpower, and about the time that Allied forces were embarking on the Sicilian Campaign, Field Manual 100-20, *Command and Employment of Airpower*, was published by the U.S. War Department.<sup>31</sup> Styled by many at the pentagon as an AAF "declaration of independence,"<sup>32</sup> FM 100-20 made land and air power "co-equal," proclaimed flexibility as air power's "greatest asset, and forbade the campaign commander from attaching air forces to ground units except under circumstances where they were isolated or operating independently."<sup>33</sup> These statements established the doctrinal foundation for the modern air component commander, and by extension,

the modern ASOC as an element of the AOC operating in support of (but not operationally subordinate to) the ground commander.<sup>34</sup> Although FM 100-20 was not expressly written to replace FM 31-35, it essentially rendered the former manual obsolete without providing the practical details required to implement the air-ground system, as FM 31-35 had.<sup>35</sup> The Army would have to wait until near the end of World War II for more practical doctrine to be codified.

### **The Italian Campaign**

As military operations moved out of Africa and into Italy, close air support in the early stages of the new campaign showed little improvement from the previous one. The July 1943 invasion demonstrated poor coordination between air and ground elements, lack of air planning in conjunction with the other services, and ineffective air support request processing and execution. Fighter Control Centers had been set up on ships to communicate with a few Air Support Parties during the invasion of Sicily, but the system did not work well due to inadequate training and communication limitations.<sup>36</sup> As Allied forces moved up the Italian peninsula, however, U.S. military air and ground integration began to improve. Undoubtedly, achieving air superiority sped these improvements as it freed more aircraft to participate in the air-ground mission. Additionally, pilots and planners who were less concerned about the air-to-air threat could direct their focus more consistently to the ground war.

Central to effective close air support was getting the overall air control process in place and functioning smoothly through cooperation at each location. The primary change from the former doctrinal process was that the tactical air commander, collocated with the army command post, had final decision authority about air support instead of the ground commander.<sup>37</sup> The air-ground system that evolved in the Italian campaign consisted of three active parts. The most senior element was the *Joint Army-Air Control Center*,<sup>38</sup> later known as the *Tactical Air Control*



*Center*,<sup>39</sup> that maintained awareness of all air operations and sent orders to airfields for tactical execution. This element might be described as a cross between the modern-day AOC and ASOC, with more authority than an ASOC but fewer overall responsibilities than an AOC. The middle element consisted of *forward director posts*, or *tactical air direction centers*, which were communications hubs located with the corps to provide direction to airborne assets with regard to targeting and threats – essentially a military air traffic control function (similar to a modern day Control and Reporting Center (CRC)). The third, most junior element was the ground or air controller, essentially a TACP or Forward Air Controller (FAC) on the ground or in the air. Figure 2 provides a visual representation of the system in Italy.

Air support was requested as either *prearranged*, or *call* (equivalent to the modern variation between a *preplanned* request and an *immediate* request). *Call* missions were based on real-time battle needs, and went directly from the front to division, who relayed the request by radio to an air-army control center. Corps monitored the relay, but would not intervene unless it was to deny the request – demonstrating the practice in air-ground operations that *silence is consent*. At the operations center, both an air and ground operations officer would review the request. Both held veto power. If approved, the order was issued to the airfields to get an aircraft on station, with a standard on-station target time of 90 minutes from request origination. Additionally, *prearranged* missions could be diverted to strike higher-priority *call* missions. Some missions were also planned to be airborne on-call, managed by an air or ground forward controller after taking requests directly from front-line ground troops (an early example of what is now called XCAS). These could strike targets in as little as ten minutes from the time of request.<sup>40</sup>

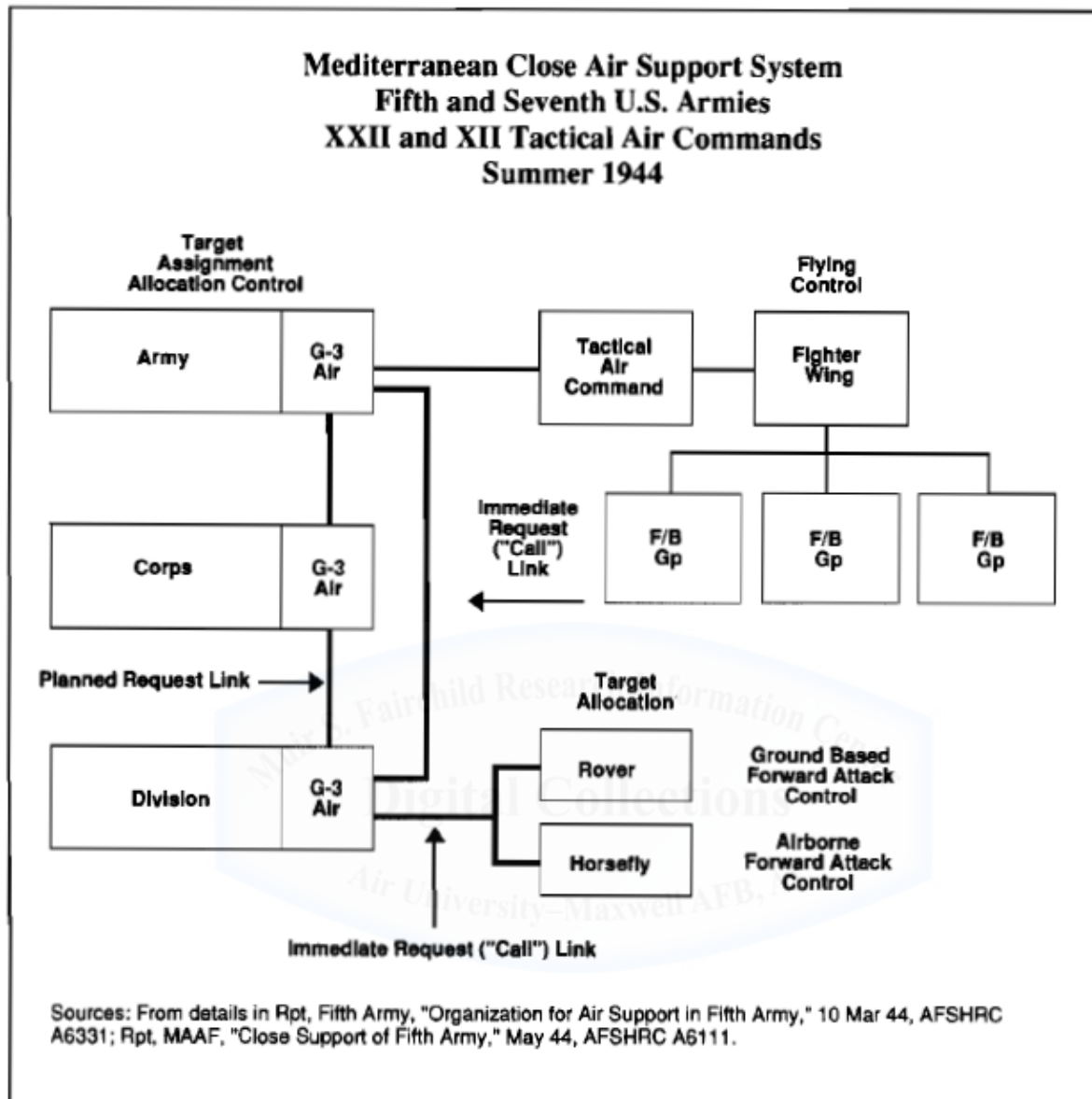


Figure 2: CAS command and control organization during the Italian Campaign. (Reprinted from W. A. Jacobs, "The Battle for France," in Case Studies in the Development of Close Air Support, ed. Benjamin Franklin Cooling (Washington DC: Office of Air Force History, United States Air Force), 273)

Two elements, in particular, bound the air-ground system together. Good communication capabilities made moment by moment tactical operations possible, linking all parts of the system and determining whether or not execution was quick and efficient. Air and ground liaisons inserted at all levels of the system (often aircrew from the air side), determined the quality of teamwork while spreading understanding between each service arm.<sup>41</sup> No doubt the quality of

communication was also directly affected by the quality of the liaison teams. Habitual collocation of command posts almost certainly affected the quality of liaison itself, as it did for the British in North Africa.

## **Western Europe**

As the air support process improved in Italy, so too did air-ground command and control in Western Europe, following a similar path of development. Despite confusing chains of command and relational difficulties among many senior leaders, those air and ground commanders at the level of execution, such as General George Patton with his air commander General Weyland or General Omar Bradley with General Quesada, developed good relationships that resulted in effective teamwork and tactical developments on the battlefield. Collocation of air-ground leaders and liaisons again provided the bedrock of these relationships, just as they did during the Italian campaign.<sup>42</sup> Improved radio technology, in the form of the SCR-399 radio, also significantly impacted the ability of ground elements to communicate with their air support liaisons and get aircraft when and where they were needed.<sup>43</sup> The level of air superiority enjoyed by the allies and the corresponding airborne assets available for air-to-ground work made CAS much more effective than it had been in Africa.<sup>44</sup> A *Combined Operations Center* executed the same function as the Tactical Air Direction Center did in Italy, managing both *planned* and *call* requests for air support. Figure 3 illustrates the organization in Western Europe. As technology improved and the relationships between air and ground commanders became more established, some command and control functions could be decentralized.

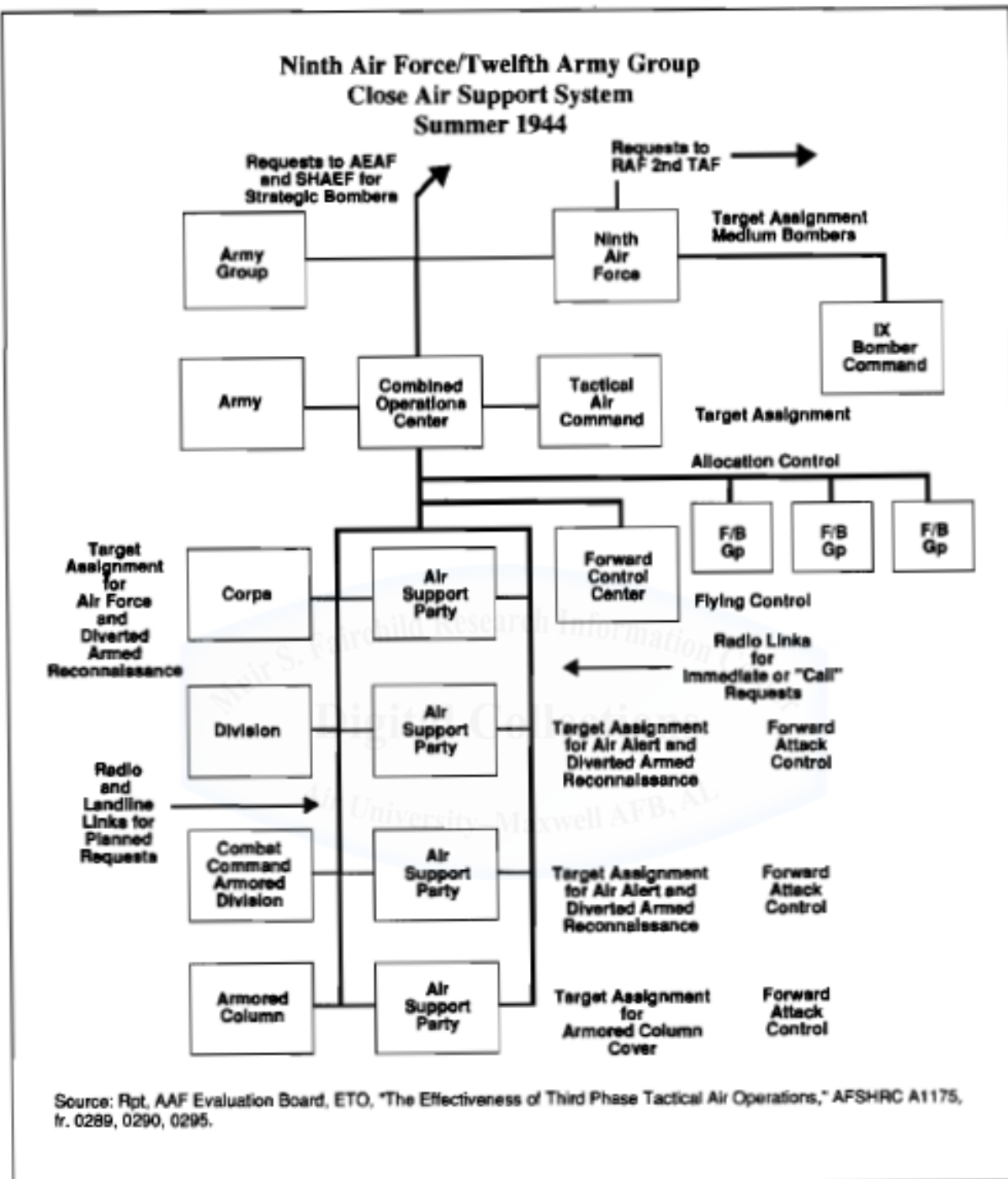


Figure 3: CAS command and control organization in Western Europe. (Reprinted from W. A. Jacobs, "The Battle for France," in *Case Studies in the Development of Close Air Support*, ed. Benjamin Franklin Cooling (Washington DC: Office of Air Force History, United States Air Force), 259)

In one example, General Weyland (the air commander working with General Patton) provided radios to some of his corps Air Liaison Officers (ALO) to coordinate directly with aircraft –

another foreshadowing of what the ASOC mission would later become.<sup>45</sup> Another example was the use of a *Rover* team moving with ground forces. Normally more similar to today's ALO or Joint Tactical Air Controller (JTAC) in practice, the Rover team began taking on a broader C2 role when divisions realized how responsive they were when combined with an on-call CAS system. In such circumstances, divisions began routing their urgent requests through the Rovers, at times over-stressing the system and requiring the teams to prioritize targets (an Army function) to decide where to send the air support.<sup>46</sup> These methods of control, and better understanding between the ground and air arms developed through close working relationships, sped up response to air requests from up to two hours to only minutes at times.<sup>47</sup> Still, no directives had been written to promulgate these tactical improvements.

### **Training Circulars 17 and 30**

Shortly before German surrender, Training Circular number 17 was finally published, officially incorporating the liaison system that had developed so effectively in Italy and France into approved execution guidance. Integration in Training Circular 17 reflected Fifth Army-XII Air Support Command methods from the Italian campaign, except that the operations and intelligence sections were replaced at each level (theater, army group, corps, and division) with *air-ground liaison sections*. When located at theater or army group levels, these were called *air-ground information centers* (AGIC), whereas they were termed *ground-liaison-officer teams* at division and corps. Additionally, the Army was given responsibility for the communications net used for air-ground coordination. Published a few months later, Training Circular number 30 provided specific implementation direction for the newly sanctioned air-ground organization.<sup>48</sup>

## **World War II to Korea**

After the close of World War II, the Army sought to officially codify the air-to-ground lessons learned in combat and defined by training circulars 17 and 30. Field Manual 31-35 of 1946 formalized the training circular updates and expanded upon them. The manual called for a *Tactical Air Command* (TAC) to be set up next to each field army headquarters in a wartime environment, together forming a *Joint Operations Center* (JOC). Tactical air requests (TAR) would be sent up through Army channels and communications networks to be processed by Air Force members of the TAC. Designated Army personnel from the air operations and intelligence sections would prioritize the missions in accordance with the Army commander's wishes and give this prioritization to Air Force members. The Air Force director of operations then decided what missions would be flown to support Army prioritized requests. Actual air missions were directed by the *Tactical Air Coordination Center* or perhaps by a *Tactical Air Direction Center* that could be inserted at the Army corps level, before being handed off to a forward Air Force member for terminal control. Air control remained firmly in the hands of Airmen, with close coordination at all levels being the key to successful air-ground operations.<sup>49</sup> Less than two years after the Air Force became a separate service however, and only three years after FM 31-35 was published, Army Field Forces advised the Air Force's Command charged with air-to-ground operations that the manual was no longer considered acceptable by the Army.<sup>50</sup> As a result, there was no official joint doctrine when the Korean War began.

## **The Korean Conflict**

In June of 1950, when the United States became involved in hostilities in Korea, the Air Force initially attempted to establish the JOC as called for by FM 31-35, but could not man or equip it sufficiently. Neither did the Army provide the manpower needed to meet the intent of

the doctrine.<sup>51</sup> Radio communications, already struggling because of field and technological limitations,<sup>52</sup> became even more difficult when the Army pushed north to reunify the peninsula. As a result, the Marine's air-ground system provided much of the air support as United Nations forces took to the offensive.<sup>53</sup> At the end of 1950, studies by both Army and Air Force personnel determined what was likely obvious to those working in the JOC: that the doctrinal frameworks in use were solid, but that neither service had provided sufficient training, communications, or agencies for the doctrine to work.<sup>54</sup> In spite of close air success in frustrating enemy offensives in the spring of 1951, the air-ground system remained a point of contention. Ten months after the beginning of the war, emergency requests still took about an hour and a half to receive air support. Two months later, the 1st Marine Division started relying entirely on emergency requests because preplanned requests through the JOC system were considered too unreliable.<sup>55</sup> Nevertheless, the system continued to improve. By the end of the war, service members at the Air-Ground Operations Conference held in August 1953 noted that the JOC had finally become a truly joint operation near the end of the war. The conference members also agreed on some points that had already become a familiar theme: that better communications and training were needed to realize an effective air-ground system. A few recommendations arose from the other services, however, including more decentralization and simplification of the air request process. For emergency requests, they recommended that intermediate command levels monitor the process, but not insert themselves unless absolutely necessary.<sup>56</sup> The idea of decentralized command would lead to the initial establishment of the ASOC in name.

### **Air-to-Ground Doctrinal Thinking in the 1950s**

While the conflict in Korea was ongoing, so too were efforts to create an acceptable joint air-to-ground doctrine. In September 1950, a *Joint Training Directive for Air-Ground*

*Operations* was published by Army Field Forces and Tactical Air Command. Born of joint collaboration at Fort Bragg, North Carolina, the manual gave the services a baseline for tactical operation in Korea, although it never became officially sanctioned joint doctrine.<sup>57</sup> Ultimately, the *Joint Training Directive* did little more than expand on FM 31-35. Joint exercises provided insufficient evidence on which to base decision-making because neither service fully manned or equipped the C2 structure (the Air Force concluded that their portion of the C2 was only 30 percent effective).<sup>58</sup> Proximity was not developed and communications capabilities were not adequately tested under the circumstances. Army leadership eventually decided that they were unsatisfied with this arrangement. Later that decade, other ideas began to circulate.<sup>59</sup>

Even though the *Joint Training Directive* was reaffirmed by the highest levels of both the Air Force and Army in 1953, there was still no official joint doctrine codified at the end of the Korean War.<sup>60</sup> Exercises during and after Korea demonstrated little other than that the Air Force command and control agencies continued to be under-staffed, under-trained, and under-equipped. The advent of the helicopter and the Army's subsequent interest in using it to provide their own limited close air support appear to have hampered efforts between the Air Force and the Army to agree on an official joint doctrine.<sup>61</sup> By January 1955, both services had all but disavowed the *Joint Training Directive*.<sup>62</sup> Seeking a remedy to the doctrinal void, Colonel Gordon Moon published an article declaring the need for a "joint doctrine on close air support" in 1956 and recommended some solutions.<sup>63</sup> His ideas included allocating a specified amount of aircraft to CAS early enough for the Army to use in planning, doing away with the JOC, and instead supplying a flexible "Air Force operations detachment with the field army headquarters."<sup>64</sup> The following year, a *Joint Air-Ground Operations* publication from Tactical Air Command and U.S. Continental Army Command prescribed that the JOC be replaced with



an *Air Operations Center* (AOC). Under the AOC at the field army level, an *Air Support Operations Center* (ASOC) was to be placed. This was to be a highly mobile operation that maintained close proximity to the army tactical operations center. Its mission was to support the field army's need for air support and was to be led by an Air Force brigadier general.<sup>65</sup> Figure 4 depicts where the ASOC fit in the Air Force component organization. The services incorporated these ideas in tactical operation, but in spite of other studies and multiple exercises devoted to the subject, there was still no official joint doctrine on close air support by the time U.S. military involvement in Vietnam began to expand. Army and Air Force views regarding who should have control of the aircraft (ground commander or air commander), and how much air controller support was required, remained divergent.<sup>66</sup>

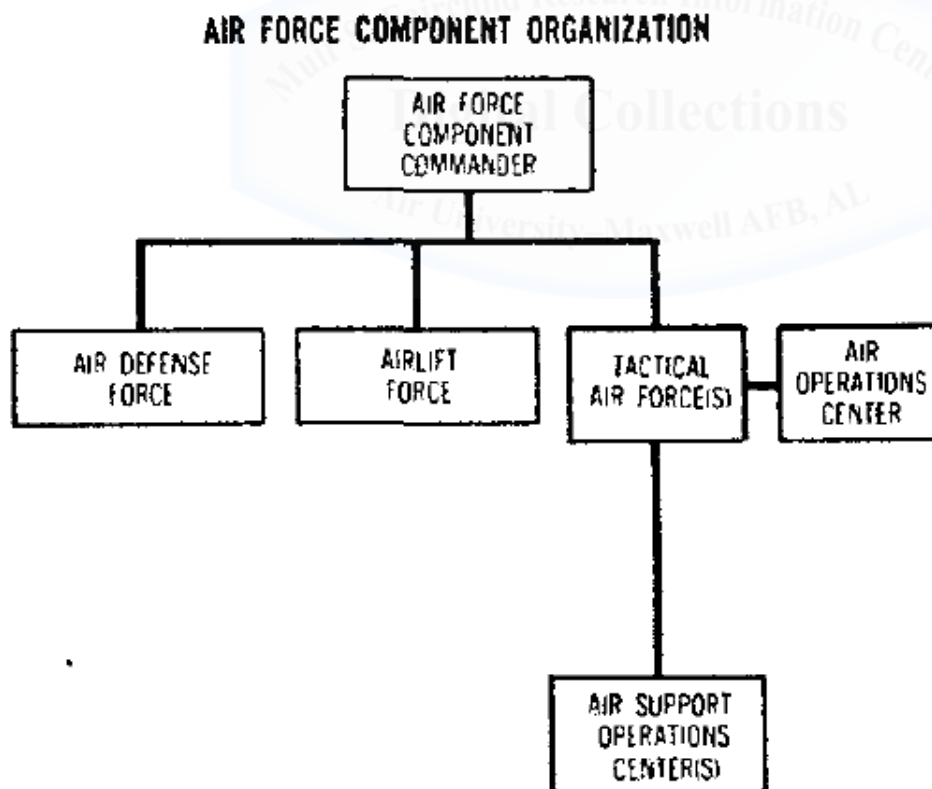


Figure 4: ASOC placement in the Air Force Component Organization in 1959 (Reprinted from Maj Robert G. Brotherton, "Close Air Support in the Nuclear Age," *Military Review* 39, no. 1 (April 1959): 33.)

## Vietnam

The ASOC was first instituted operationally in a very different wartime environment than what tactical air was familiar with. In the early stages of U.S. involvement in Vietnam, there were no front lines. The ASOCs worked directly with the host nation Vietnamese corps by providing support to their operations. The Air Force supplied the infrastructure while the Army set up a system to process and prioritize air requests before sending them to the AOC for action.<sup>67</sup> The designated ASOC (there were four in Vietnam at the time – roughly one per senior tactical echelon, which was the corps) then executed the assigned missions for each day.<sup>68</sup> Complicating the request process was the mixed military and political nature of the culture, where few Vietnamese officers working with the U.S. military had decision-making authority and political entities, such as provincial authorities, could request strikes; even wielding some approval authority.<sup>69</sup> Due to the cultural challenges, and once again a lack of training, personnel, and resources, an Air Force study later found that aircraft response times between 1962 and 1965 averaged a lumbering 90 minutes.<sup>70</sup> Improvements to the system were incremental until 1965. In 1963-1964, management of the air net passed from the Army to the Air Force in an effort to speed up responsiveness. Additionally, the concept of *silence is consent* (previously not practiced in Vietnam due in part to the political culture) was reinstituted.<sup>71</sup>

In the spring of 1965 the Air Force and Army published a joint memorandum entitled *Concept for Improved Joint Air-Ground Coordination* that brought significant changes to the Tactical Air Control System (TACS). The agreement was based on analysis directed by the Commander-in Chief, U.S. Strike Command in June of 1962. Experience from subsequent exercises supported the conclusions from the analysis that identified four deficiencies in the standard operations of the time. First, responsiveness of the system to immediate air requests

was “inadequate” because of slow processing through Army channels, which delayed knowledge of the request at the ASOC. Second, the ASOC was still not mobile enough for the needs of the Army. Third, there was a “lack of reliable communications.” Fourth, there was a “Lack of trained personnel, continuously available, who are intimately familiar with the coordination and planning techniques for providing air support.”<sup>72</sup> To address these shortfalls, the agreement established a *Tactical Air Control Center* (TACC) to replace the Air Force command post (that took over the management of preplanned requests from the former ASOC) and a more flexible *Direct Air Support Center* (DASC) to replace the ASOC. Additionally, the Air Force officially agreed to establish and manage two radio nets. These included the *Air Force Air Request Net* (AFARN) for direct requests from the TACPs to the DASC, and the *Tactical Air Direction Net* (TADC) for the control of aircraft assigned to the DASC. Immediate requests were to be sent directly to the DASC from as low as the battalion command post (where a TACP would be located), while being monitored by all intermediate army command posts that could intervene if they chose to.<sup>73</sup> Figure 5 depicts the new structure. In this way, the tactical structure being executed in Vietnam was formalized and the various command entity names changed. It should be noted that the Marine Corps also had (and still have) a DASC in their air-to-ground organizational structure. The Marine DASC was similar to the Air Force one in that it directed aircraft to support ground units, but had less authority.

In practice, the DASC directors in Vietnam appear to have had broad latitude to implement the guidance they were given. For instance, the 22nd Tactical Air Support Squadron mobility officer identified in a note written to his commander on 5 June 1972, that he was lacking written directives standardizing DASC operations. Nor was there consistent manning or equipment guidance, other than what “should be used as a general planning guide.”

Additionally, he highlighted a communication problem of the time by stating that “the use of related terminology is not consistent throughout the Air Force/PACAF.”<sup>74</sup> This note was written about a month after his unit exercised the *leapfrog* concept, where an element of the DASC moved to establish a new operating location as the army moved forward and was then joined by the rest of the DASC.<sup>75</sup>

The director of the DASC supporting the U.S. Army’s 24th Corps from July 1969 to July 1970, Colonel Alonzo Walter Jr., also pointed out in an interview on 28 July 1970 that how they operated with regard to integration in the Army’s planning was not necessarily the way that other corps operated.<sup>76</sup> Additionally, he explained that the size of the DASCs varied, with the directors essentially operating as “squadron or wing commander(s).” Under Colonel Walter’s control were seven forward operating locations that included roughly 65 aircraft and 80-100 forward air controllers (FAC). He was responsible for moving the aircraft and FACs from base to base as necessary, but did not technically own the airplanes. This was due to a confusing dual chain of command relationship where the 504th Tactical Air Support Group and its subordinate unit, the 20th Tactical Air Support Squadron, managed many of the support functions and personnel issues for his DASC. Colonel Walter was also responsible for the evaluations of all the ALOs under his DASC, but the awards process was managed by the 504th.<sup>77</sup>

In Colonel Walter’s experience, his Army counterparts were generally pleased with the air support they received from his DASC. Major General Jack Wright, commander of the 101st Airborne, always demanded more than what he got. He later admitted that he was happy with the overall support, but always asked for more because he felt he owed it to his men.<sup>78</sup> General Wright’s approach highlights what the ASOC often deals with as it manages air at the ground commander’s headquarters: that ground commanders will typically want more air support than

what they get (or is available). Because of this, the ASOC job might be analyzed as an economics problem of supply and demand, where ASOC officers must always advocate for the Air Commander's point of view (the supplier), at the point of greatest demand.

Colonel Walter also highlighted the matters of communication and proximity in his interview. With regard to communication, he states that during his tenure in Vietnam (roughly seven years after the U.S. started executing tactical air in support of the South Vietnamese), the mechanical communication infrastructure was quite good. On the other hand, he notes that "one of the big problems we have over here... is people communicating with each other. There seems to be an amazing propensity for people to listen, but not to hear." Additionally, Colonel Walter believed that the DASC director (who is also the corps ALO), should always be collocated with the Army's intelligence and operations air personnel. His experience demonstrated that "the manner in which the tactical air was used or not used by the ground commander... was largely a reflection of the influence exerted by the Air Liaison Officer, at whatever level."<sup>79</sup> Based on these statements, it is clear that the quality of relationship and involvement of the ALOs directly affects the quality of CAS. Moreover, as these relationships improve, so too might the common language and shared mental model between service members. This should reduce the problem of people listening but not really hearing. Shared language and understanding are critical to joint operations, and these are developed primarily through shared experience. How much shared experience under various circumstances is required before communication reaches a high level of performance? The answer to this question might be useful as a guide to habitual peacetime interaction and exercise involvement between Air Force and Army air-to-ground counterparts.

By 1968, the air-to-ground system had progressed enough that response to immediate requests averaged 20 minutes for aircraft already airborne and 40 minutes for aircraft on ground

alert.<sup>80</sup> This could be attributed to adjustments to the system, or it might be attributed to more robust capability in theater. The improvements might also be attributed to the simple fact that the air-ground relationships and mutual understanding of the system had developed enough to make it effective, just as had been done in the previous two wars after at least a year of working in concert. There was one drawback to the improved response times to immediate requests. Preplanned requests often went unsupported because aircraft were diverted to support immediate requests instead. Pilots therefore often responded to requests with sub-optimal weapons loads, fuel-states, and knowledge of the employment area because what they supported was not what they had prepared for. Preplanning became an exercise simply to get aircraft airborne in one's vicinity so that it might be used for immediate requests instead of planning for legitimate and worthwhile targets, as the process was intended to do.<sup>81</sup> This reality was illuminated by later comments from Army members, including one who admitted that he was pressured by superiors to request air strikes that were unneeded. They would simply pick a random coordinate, request air support to strike it, and the next day it would be struck.<sup>82</sup>

At the end of the conflict, ground commanders' comments were primarily positive about the air support received.<sup>83</sup> Perhaps this should come as no surprise. In a non-traditional war with no front lines and very little air threat, the need for air superiority and interdiction naturally diminished. The abundance of air power was therefore free to provide direct support to ground forces. As General Momyer pointed out, it would be a mistake to assume that this will always be the case.<sup>84</sup> Even so, the close proximity developed between the Army and the Air Force over the course of the war proved beneficial beyond tactical execution in Vietnam, as the services later refocused on joint integration to counter the Soviet threat in Europe.

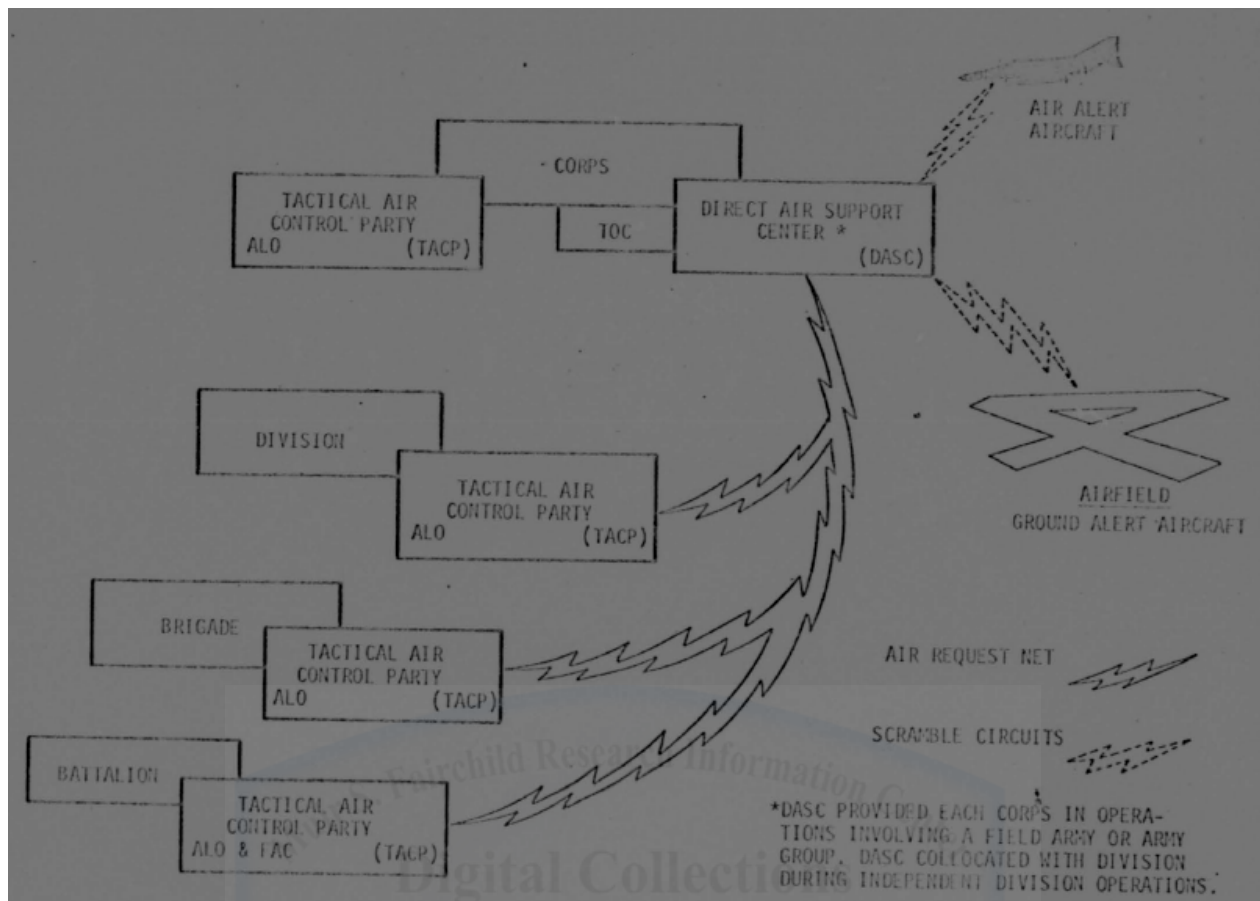


Figure 5. Depiction of Revised Tactical Air Control System in 1965 (Reprinted from the Concept for Improved Joint Air-Ground Coordination, April 1965.)

## Developments in the Decade Following Vietnam

It must be remembered that the Vietnam conflict was fought within the larger context of the Cold War. Military strategy continued to develop along the lines of how to confront Soviet forces in a North Atlantic Treaty Organization (NATO) led Central European conflict. Army Field Manual 100-26 of 1973 reflects this reality when it explains the roles of the DASC, by noting that “when operating with NATO forces, the DASC may be referred to as the air support operations center.”<sup>85</sup> According to FM 100-26, the DASC/ASOC was to be a mobile capability that operated primarily with the corps, but could also operate at an independent division operations center. Its primary job was “to provide a fast-reaction capability to satisfy immediate

requests from Army forces for tactical air support.” Additionally, the DASC provided advisory and liaison roles, executed net control of designated radio networks, supervised and informed subordinate TACPs of upcoming operations, and maintained awareness of weather impacts. Under certain circumstances, the DASC was able to cover higher level AOC roles as well.<sup>86</sup>

Figure 6 depicts the Tactical Air Control System (TACS) design, as illustrated in FM 100-26.

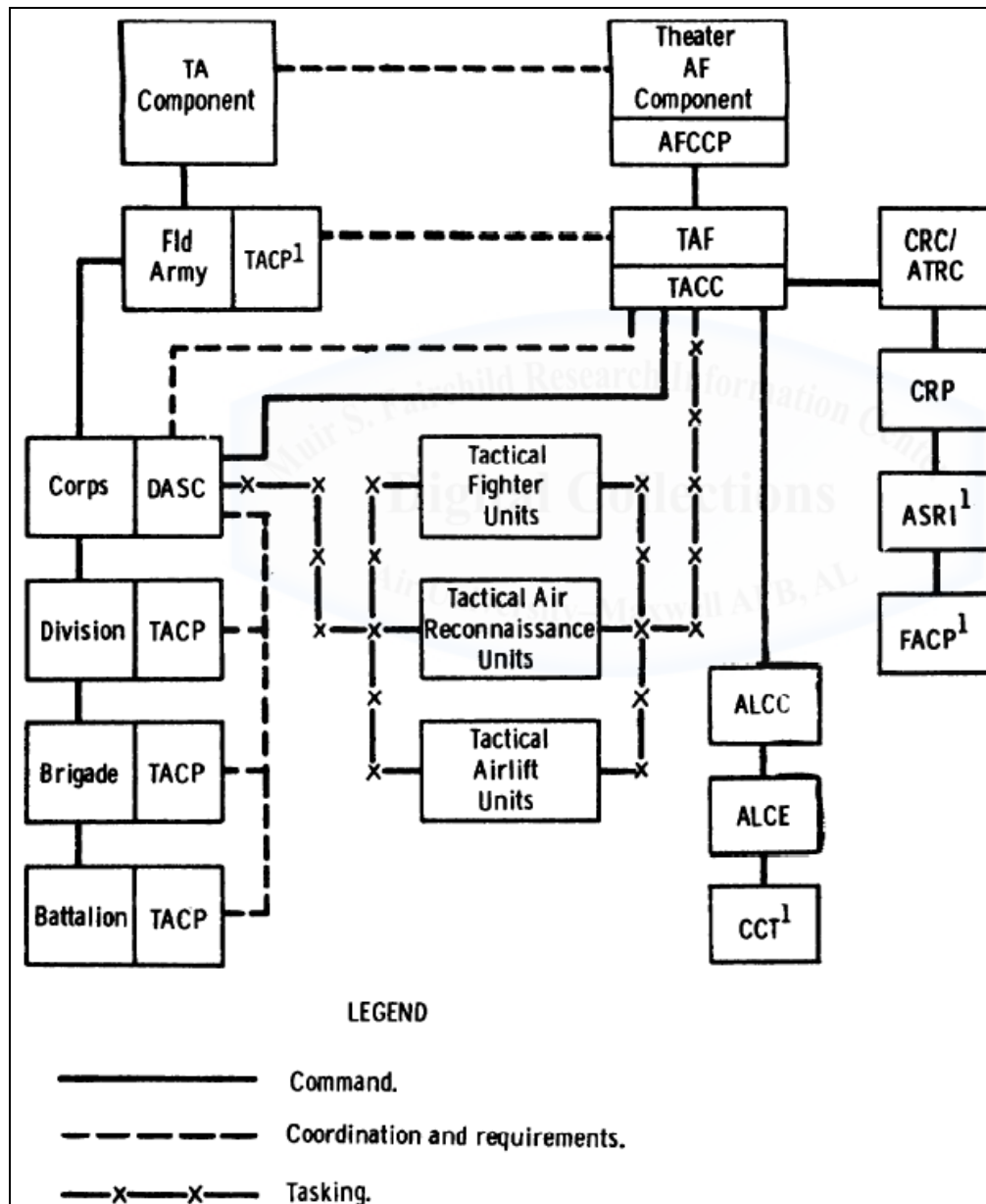


Figure 6. Tactical Air Control System in 1973 (Reprinted from FM 100-26, The Air-Ground Operations System, 30 March 1973, 38.)



The good relationships developed between the Army and the Air Force in Vietnam resulted in the development of a joint agency known as the *Air Land Force Application* (ALFA).<sup>87</sup> In 1992, ALFA changed their name to the *Air Land Sea Application* (ALSA), and remains responsible for developing joint doctrine today.<sup>88</sup> As ALFA expanded the concept of AirLand Battle as a method of countering the Soviet threat in Central Europe, they concluded that FM 100-26 should be rewritten to be a manual for joint doctrine. They announced these intentions in the *Air Land Bulletin* of 19 July 1979. Furthermore, this bulletin stated specifically that “In order to provide a common understanding, the manual will use NATO terminology as its base.”<sup>89</sup> In accordance with this principle, both the 682nd and 712th DASCs changed the latter part of their names to “Air Support Operations Center Squadron” from “Direct Air Support Center” on 1 November 1979.<sup>90 91</sup> The Air Force’s senior tactical command and control entity has been known as the ASOC ever since.

### **AirLand Battle and the 1980s**

As the services developed their concepts for countering the Soviet threat in the ensuing years, the lessons identified about what constitutes an effective ASOC largely remained the same. In one testament to the need for proximity, the after-action report for a 1983 U.S. Army exercise, where the ASOC worked with a corps G3 air member at times (an army planning and operations representative), noted that “Corps G3 affiliation with the ASOCs varies from full time representation to no representation. The association which seems to work best is one in which the G3 representative is available to the ASOC full time.”<sup>92</sup> The value of both proximity and communications to an effective ASOC was also noted in a letter written to ALFA by Lt Col Stephen Hebbard, commander of the Air National Guard’s 111th DASC (apparently this guard unit had not changed its name at the time), in response to a 1985 article in the *Air Land Bulletin*.

The letter, published in the first bulletin of 1986, explains that “The ASOC... is an excellent place to coordinate information. A properly functioning ASOC is in constant communication with [several Army and Air Force command organizations]. Hence, the Army and Air Force channels meet here.” Later in the same letter, Lt Col Hebbard voiced his concern that ASOCs are sometimes simply used as a communications relay instead of as the “operational organization” it is meant to be.<sup>93</sup>

The need for flexibility was highlighted in a 1987 study by Captain Peter Hoak, who sought to develop a “decision support system for dynamic retasking of CAS and Battlefield Air Interdiction (BAI) assets” (The ASOC was involved with BAI at the time, as this was a common component of the AirLand Battle doctrinal conversation).<sup>94</sup> Captain Hoak recognized that ASOC operations changed depending on what theater they were supporting. Additionally, they could be tasked to operate at a field army level (above corps) or even as low as a brigade (two levels below the corps they were normally expected to operate at). Because of this, the ASOCs had to be very flexible in both integration with the army and execution of their mission, as did their methods of decision-making within the very fluid and fast-paced framework of the AirLand Battle concept. Captain Hoak’s analysis was that the ASOC of 1987 was “not well prepared to execute and plan flexibly.”<sup>95</sup> At the time, the ASOC was using 1960s methods with little technological support to asset retasking determinations, resulting in slow decision-making because of the large amount of manual information processing required. For good decisions to be made responsively to changes on the battlefield, a vast amount of information needed to be communicated to members of the ASOC and then filtered to provide usable data. The automated support that was planned to be added to the ASOC was to be used to get the daily aircraft schedule and to link them to aircraft information. It was not to directly assist the decision-

making process. Better situational awareness methods, such as datalink (Joint Tactical Information Distribution System) and *Tactical Battle Management* (TBM) systems were under development, and most importantly, there was a 10 year plan to develop a better ASOC.<sup>96</sup>

## **The Gulf War**

When Desert Storm was executed four years later, the ASOC got to test some of its new equipment and modified doctrine. The 712th ASOC was tasked to deploy to Saudi Arabia with only 36 of the 105 personnel they were used to operating with. Operations members tended to be over-tasked while some support personnel were under-tasked. 712th members had not used some of the new equipment before, specifically the *CAFAMS*, for downloading and disseminating the daily air schedule (*Air Tasking Order* or ATO). Learning and operating this automated system proved time-consuming. When the 712th first arrived, there was little communications equipment available. As a result, they became the primary communications hub for their base until the official communications unit arrived. Neither was the unit attached to the normal corps structure they were familiar training and operating with.<sup>97</sup> Mission communications had to be “pieced together with bits and pieces from all the tactical commands,” and the planned use of Ultra High Frequency (UHF) radio for contact with the TACPs did not work because of the distances involved.<sup>98</sup> High Frequency (HF) radio was the best method of tactical communication in many instances.<sup>99</sup>

Lessons identified after the conflict included: that army fire support officers were often not well versed in the air-to-ground system, resulting in the ALOs continually training them on how it worked;<sup>100</sup> in the fast-paced war, the army was very dependent on CAS;<sup>101</sup> and incompatibility of systems was a major problem.<sup>102</sup> ASOC leaders determined that the mission should always maintain the ability to move.<sup>103</sup> The 602nd Tactical Air Control Wing found that

response times to air requests had been slow and that long-haul communications were not effective. The 602nd also determined that ASOCs should “move to corps and increase field exercise involvement.”<sup>104</sup> The commander of the 712th characterized the deployment by saying that “in almost every way, the normal *modus operandi* of the unit, prior to deployment, was radically different.”<sup>105</sup>

### **The ASOC in the 1990s**

As the intellectual theory behind the U.S. military mission changed after Operation Desert Storm and the end of the Cold War, so too did the interaction between the Army and the Air Force, naturally impacting the ASOC. By 1994, the ASOC mission no longer officially included battlefield air interdiction, but remained responsible for directing CAS and reconnaissance aircraft based on the land component commander’s priorities. It consisted of 114 operations and maintenance personnel, although AFI 13-106 (published 21 July 1994) included a provision stating that “operational requirements determine size, configuration, manning, and equipment.” The ASOC was to be located within the Fires Element (the agency responsible for coordination of army weapons employment on the battlefield) of the Army’s tactical command post and provided a broad range of support for deployed TACPs. Additionally, the AFI called for a *leap* ASOC capability that enabled mobile operations and could change locations while continuously executing its CAS C2 responsibilities.<sup>106</sup> Figure 7 depicts the Theater Air Control System as defined in AFI 13-106 of 1994.

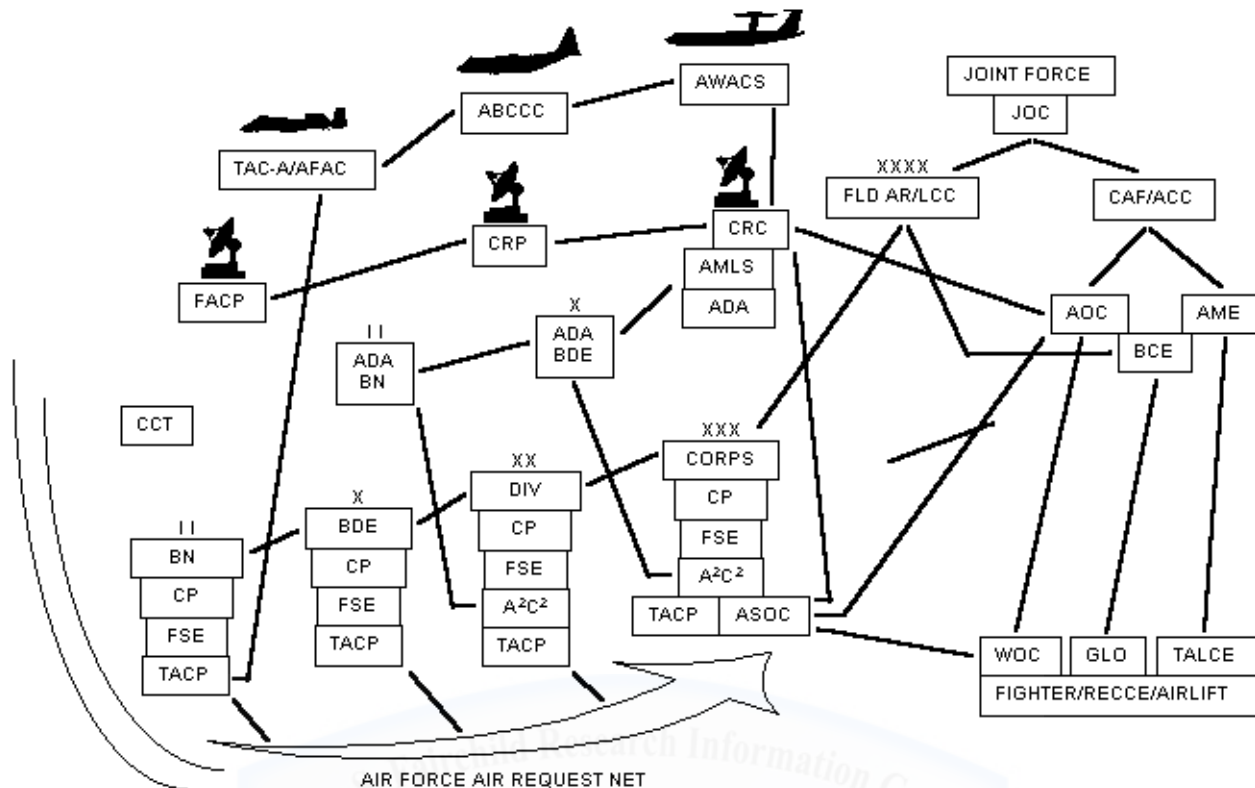


Figure 7. Tactical Air Control System in 1994 (Reprinted from AFI 13-106, Air Support Operations and Tactical Air Control Parties, 21 July 1994.)

## U.S. Army Reorganization

At about the same time, the U.S. Army began to rethink its force structure as it looked for better ways to flexibly respond to a broad range of possible contingencies in the 21st century. In August of 1994, the Army's Training and Doctrine Command (TRADOC) published Pamphlet 525-5 that articulated a vision for change designed to meet these possibilities. *Force XXI* identified five defining characteristics needed for the future service. These characteristics were "doctrinal flexibility, strategic mobility, tailorability and modularity, joint and multinational connectivity, and the versatility to function in War and Operations Other Than War."<sup>107</sup> Perhaps the most important aspect for the future of the ASOC was Pamphlet 525-5's

statement that the Army “must organize around the division as the major tactical formation with the capability to tailor it for specific mission purposes.”<sup>108</sup>

Nine years later, under the direction of General Peter Schoomaker, the Army officially implemented the strategy that *Force XXI* laid the foundation for. It came to be known as *modularity*. The idea behind modularity was to create a variety of *Brigade Combat Teams* (BCT) that could be interchangeable and built upon each other to construct a larger force, if necessary. In the previous Army construct, the division was the primary building block; designed for Cold War style conflicts. The problem with the division-centered system was that when a small-scale conflict arose, parts of the division would be parceled out to support the conflict as needed. The capability of the division was subsequently reduced, and the ad hoc force that was assembled for the conflict was not optimized either, because they were not designed to work together. Modularity sought to remedy this problem, making the Army more flexible and lethal in the process.<sup>109</sup> Meanwhile, the Air Force recognized that if the Army was reorganizing itself, the units designed to provide air support to the Army may have to be reorganized as well. Because the ASOC was designed to collocate with the Army’s senior tactical fires echelon – previously the corps, but now the division in the modular construct – it appeared that the ASOC may have to be habitually realigned with the division. The decision to move the ASOC to division was spurred by developments in tactical theory that envisioned the ASOC operating as part of a *Joint Air Ground Integration Center* (JAGIC). The JAGIC included the ASOC, the division TACP, Army Fires, Army Airspace Command and Control, Army Air and Missile Defense, and other elements required to provide responsive, coordinated, and deconflicted fires in support of the ground commander’s scheme of maneuver.<sup>110</sup>

The 31 March, 2011 operating agreement on liaison support between the U.S. Army and Air Force currently drives the ASOC move to the divisional level. It states that the Air Force will provide “A Modular ASOC in Direct Support to the Army tactical command echelons (e.g., division and/or corps), as the focal point of supporting air operations. ...The ASOCs will be habitually aligned to each of the 10 active duty divisions once fully operationally capable (Fiscal Year 2015 projected) to develop the teamwork needed to maintain combat readiness.”<sup>111</sup> By collocation, the Air Force hopes to build proximity in the air-to-ground mission. As this memorandum demonstrates, the Army’s reorganization to modularity played a major role in the ASOC shift to division alignment.

### **Operation Anaconda**

In the year preceding General Schoomaker’s implementation of modular force structure in the Army, another event took place that has been a catalyst for change in the ASOC. Operation Anaconda, fought in Afghanistan from 2-16 March 2002, illuminated the problems that can result when a trained and equipped ASOC is not available to provide real-time air-to-ground command and control for an active battlespace. The operation was executed with relatively short-notice planning by the 10th Mountain Division headquarters. Air Force Combined Air Operations Center (CAOC) leadership was made aware of the plan only a week before it was to begin. An ASOC had not been included in Afghanistan until recently because operations had been run by special operations personnel rather than a conventional army and the air effort had been relatively small. The CAOC (located in Saudi Arabia and separate from the ground commander) had been executing the role of the ASOC. When the 10th Mountain Division took responsibility for the operation on 17 February 2002, the aligned senior ALOs began thinking about assigning ASOC personnel to support it. Although an ASOC was not

requested, they sent four individuals to Bagram to execute an ASOC function as well as they could (they were later augmented with two more individuals after the battle began). With limited space and inadequate communications equipment, these Airmen managed to set up a working cell with the help of a two-day weather delay to the operation. They still had to rely on the CAOC for awareness of the battlefield and contact with the aircraft.

During the battle, the ASOC received requests from ground personnel and passed assignments to aircraft through other entities, including the CAOC and E-3 Airborne Warning and Control System (AWACS) aircraft.<sup>112</sup> A coherent communications plan had not been disseminated. AWACS managed aircraft in and out of the battlespace, but no one had effective responsibility for airspace management above the roughly five by nine kilometer area that the battle was being fought in. Then Captain Scott Campbell, an A-10 pilot that led a two-ship of aircraft on the third night of the battle, noted that when he arrived he had no ASOC to check in with to get direction, an update on the battle, or priorities. His awareness of the battlespace was extremely limited as a result. Because no one was directly managing the airspace, his flight had several near collisions, including with a C-130, a pair of F/A-18s, a UAV, and a weapon being dropped through their airspace. After finding some working frequencies to contact the AWACS and ground controllers, he and his wingman began acting as airborne forward air controllers (FAC-A) to deconflict the airspace themselves.<sup>113</sup> From that point forward, FAC-As were used to manage the airspace above the battle.

Although the ASOC acted flexibly, poor planning and coordination hampered their efforts and their late arrival made integration with the army headquarters difficult. Communications and equipment limitations prevented direct contact with the aircraft, negatively affecting pilot awareness of the battlespace and safety of flight. General Moseley, the Air



Component Commander during Operation Anaconda, believed that the problems the ASOC cell experienced were “a symptom of the much larger problem of component coordination.”<sup>114</sup> The need for better ASOC integration was nevertheless clearly highlighted in the aftermath.

### **Development of the Joint Air Ground Integration Center**

From the lessons of Anaconda and other operations in Afghanistan and Iraq,<sup>115</sup> particularly those of V Corps integrating the ASOC with their fires, intelligence, and army air command and control teams in 2002-2003, came the idea and subsequent implementation of the *Joint Air Ground Integration Center (JAGIC)*.<sup>116</sup> Initially dubbed *Joint Air Ground Control Cell (JAGC2)* by the *ASOC Enabling Concept* published by the Air Force on 1 June, 2006,<sup>117</sup> the JAGIC is meant to fully integrate air and ground elements to form a responsive targeting and deconfliction team for joint fires. JAGIC and the Division ASOC are often incorrectly assumed to be the same thing because of their near simultaneous implementation and the effect they have on one another, but they remain two separate concepts. JAGIC is simply a tailorable combination of mission capabilities, often including the ASOC, TACP, army fires, and army airspace command and control, leveraged to meet the needs of the tactical situation.<sup>118</sup> It can be described as a tailored seating chart. If it were implemented in a similar situation as Operation Anaconda presented, a functional JAGIC could easily manage the task. Indeed, with the addition of Procedural Controllers to the ASOC, it might appear that JAGIC was specifically designed for this task. Because the Army and Air Force command and control elements work closely together in this concept, JAGIC also has the potential to help resolve the larger problem of component coordination that General Moseley identified from his experience with Anaconda.

In spite of the lessons learned at the beginning of this century, ASOC enablement has all but ground to a halt. Sequestration made it difficult to expand the ASOC when the military was

looking for ways to cut spending. The Army's shift to modularity was also made more difficult. In 2006, there were concerns that the Army Active Component end strength of 482,000 might be insufficient to complete the shift to modularity.<sup>119</sup> The 2014 Quadrennial Defense Report has since directed that the Army's end strength be reduced to 450,000 or less.<sup>120</sup> As the Air Force focuses on how to make the cuts associated with sequestration, the ASOC continues to implement what appears to be a doomed initiative. Instructions and equipment authorizations remain designed for a corps level function. Division level ASOC personnel must determine how to integrate with the unique mission of the division they are associated with while maintaining the ability to support a corps-sized headquarters. Finally, squadron level Division ASOC members continue to receive little direction on how to implement their charge. The Air Component Command vision for the ASOC (which states that it will be reviewed annually) does not appear to have been changed since it was written in 2007. The Division ASOC resembles a house partially built and then forgotten. It is time the Air Force either completes construction or tears the house down.

## Summary and Analysis

What lessons can be drawn from the historical development of the ASOC that might assist those responsible for building the ASOC of the future? In particular, three timeless principles can be identified. First, the importance of flexibility to the design of an ASOC cannot be overstated. Second, robust communications are critical to any ASOC operation. Third, the proximity of ASOC personnel to those they work with, beyond simple collocation, is the vital component that spells the difference between smooth joint operations and protracted internal struggle between the air and ground elements of a combat operation. If these principles are combined effectively in the design of the ASOC, it will empower the ASOC to improve overall joint interoperability between the U.S. Air Force and Army. Therefore, these three principles bear further development and explanation.

### Flexibility

The history of CAS C2 demonstrates that in almost every conflict, the role of the ASOC mission has been unique. For instance, because the Italian campaign moved relatively slowly, the CAS C2 element could be located in a single location for some time. However, in Western Europe it was a much faster moving entity, demanding greater mobility.<sup>121</sup> Fast paced operations require the ASOC to be mobile, while keeping constant awareness of where the battle lines are in an ever changing environment. Such movement may necessitate the ability to split the ASOC in two and execute a *leap* concept, whereby part of the unit moves forward and sets up at a new location while the former location continues to operate until the new one is fully functional.<sup>122</sup>

The ASOC has to be flexible in the scope of its operation and responsibilities as well. At some points in Vietnam and World War II, the organization was directing hundreds of aircraft per day to emergency requests that forced constant change. However, in limited conflict there may be little change to the air plans at all, necessitating minimal adjustments for those manning the ASOC duty positions. The Army's move to a modular force with ASOC alignment at the division has forced an even greater need for flexibility. The ASOC must be ready for a large-scale conflict where it is pulled back to a corps to execute a traditional role, or it may need to be made small and nimble in order to meet the requirements of a light infantry division like the 82nd Airborne. In this role, the ASOC might find itself supporting a quick reaction force that could take it anywhere in the world in a matter of four days, with a fraction of the personnel and equipment it is used to training with because there is simply no room for it. The ASOC may even need to be capable of being jumped into an austere location, regardless of how likely that scenario might be. Being ready to execute such a mission would require a very different equipment and personnel training construct than the one-size-fits-all ASOC design that is currently implemented throughout the military.<sup>123</sup>

In the airspace realm, the ASOC must train to manage congested airspace without the advantages of RADAR coverage, and possibly with many small unmanned aerial vehicles to monitor. It must also be prepared to go into a location like Iraq in Operation Inherent Resolve, where it owns no airspace and there are limitations to the number of soldiers permitted in the operating location. As in Operation Desert Storm, it may need to deploy with only partial crews and very few support personnel. The ASOC must also be flexible in its mission integration and living situation because it must find a way to fit whatever Army unit it is supporting – which may or may not be the unit it is aligned and habitually trains with.

Moreover, the hardware and software that is being used to execute the mission will likely not be the same as what ASOC crew members are used to training with. The possibilities are innumerable, and they have only expanded with the move to division alignment. Even if the course is reversed and the ASOC returns to corps alignment, it will still have to be ready to support a division-led operation under the modular Army construct. The ASOC must therefore be inherently flexible in both its design and training.

### **Proximity**

The close proximity of air and ground personnel has been recognized throughout the history of air-to-ground operations as being vital to effective operations. British General Bernard Montgomery noted from his own experience that air power was best executed when controlled by an air commander who maintained a close relationship with the ground commander.<sup>124</sup> Allied operations in Italy and Western Europe both demonstrated that when air and ground liaisons were collocated at all levels of joint operations, close air support improved markedly. After World War II, the writers of doctrine sought to codify these relationships in a system that could be reproduced.<sup>125</sup> In reality, the liaison system worked not because of the system itself, but because of the relationships that developed when air and ground personnel worked together consistently – a result that can be fostered or hindered by the system in place. General Omar Bradley and his air counterpart, General Pete Quesada, had an exemplary relationship.<sup>126</sup> Bradley once referred to Quesada as a “jewel.”<sup>127</sup> General Patton and General Weyland also enjoyed such a good relationship that Patton credited Weyland with the success of their combined operations.<sup>128</sup>

Recognizing the centrality of collocation to superior air-to-ground results, the Air Force put its Tactical Air Command headquarters near the headquarters of Army Field Forces after its

independence. The Air Force placed another tactical headquarters at Pope Air Force Base (AFB), next to Fort Bragg, for the purpose of joint exercises, out of which came the *Joint Training Directive* that guided operations in the Korean War.<sup>129</sup> In contrast, during the planning for Operation Anaconda, Air Force headquarters was not collocated with Army headquarters and the result was that the Air Force was minimally involved in the planning.<sup>130</sup> Other factors certainly played a part, but had these headquarters been collocated, it is doubtful that the Air Force would have been unaware of the planning for so long. From these lessons, the Air Force and Army decided to design what is now the Joint Air Ground Integration Center (JAGIC), of which the ASOC is a central member along with Army fires and air personnel.<sup>131</sup>

The concept of proximity is not limited to space and time. Proximities of understanding and language are indispensable aspects of seamlessly integrated operations. These result from fighting and training together consistently. Joint doctrine is intended to bridge the gap that otherwise exists between the different languages and cultures of the Army and Air Force, not to mention the other services. Doctrine is only worthwhile if it is read, understood, and accepted by all parties involved in the mission. As General Quesada, former commander of Tactical Air Command,<sup>132</sup> was quoted as saying “You can have all the doctrine you want, but unless you have people, commanders to implement those doctrines, you might as well throw your doctrines away.”<sup>133</sup> This is not to say that doctrine is worthless, but that military members must know it to implement it. Comprehension and employment of doctrine improves proximity, thereby improving relationships and joint mission execution. This is especially true at the ASOC because it operates at the intersection of Army and Air Force command and control. The ASOC is therefore uniquely positioned to be a catalyst for true joint interoperability. Located and trained prudently, it has the potential to drive the Army and Air Force toward better mutual

understanding. In turn, perhaps the services will finally realize authentic joint interoperability. This has been the intent of Congress ever since the National Security act brought the services under one head in 1947. Their intent was reiterated by the Goldwater-Nichols act of 1986.<sup>134</sup>

## **Communications**

The centrality of communications to the ASOC cannot be overstated. When ground commanders complained about the air support they were receiving in the African campaign of World War II, the investigation conducted by General Spaatz determined that the problem was a lack of communication.<sup>135</sup> After studying the conflicts of Vietnam, Korea, Midway, and The Solomons, a 1991 RAND study on the command and control of joint operations determined that “Communications are the Achilles’ heel of any joint operation, but particularly a joint air operation. No joint commander should ever be satisfied with his communications plan or the training of his forces in using it.”<sup>136</sup> Air Force doctrine stresses the practical application of communications for the ASOC, identifying it as the third principle of employment because line of sight communication will be important when determining where to field the ASOC.<sup>137</sup> The ASOC exists as an information hub that cannot operate if it cannot communicate effectively. The ASOC must maintain awareness of both air and ground positions, which requires constant communications. It is the Army’s link to the Air Force when support is needed immediately. It must maintain seamless communications with the TACPs, the aircraft it is controlling, the command headquarters it supports, the CAOC, airspace controllers (CRC and AWACS), the Wing Operations Centers, and be able to contact a host of other personnel under a variety of circumstances. Because communications are vital to ASOC mission execution, and because Army systems often remain incompatible with Air Force and ASOC systems, the vast majority of ASOC communication capability should remain organic to the ASOC. As the previously

quoted RAND study observed after extensive historical analysis of four separate conflicts, “Investment in good communications equipment and realistic joint staff exercises may be the best utilization of scarce resources with the objective of improving joint air operations.”<sup>138</sup> This is especially true for the ASOC.

### **Building a Principled ASOC**

If the principles of flexibility, proximity, and communications were deftly combined, what might the resulting optimal ASOC look like? A flexible ASOC is one that is highly trained, mobile, rugged, and self-sufficient. It consists of equipment and software that is easily integrated with Army systems. It can integrate across the entire spectrum of operations, supporting the unique mission of any division or corps that requires it. This may entail parachuting into an austere location with a minimum crew of cross-qualified Airmen, running 24/7 operations with three nine-man crews, or anything in between. In other words, it is scalable. What is more, it can accomplish any of its missions on short notice. To do this, the ASOC must have a simple yet robust, light-weight communications suite and the personnel with the expertise to design and set it up quickly while troubleshooting a full range of problems. The communications must include tactical datalinks and translation services, extended line of sight and satellite radio capability, and remote telephone and internet services enabling quick access to the air planning and execution products needed for the mission. Tying all of this capability together is close proximity to its customer – the Army. Although it may help, this does not mean that the ASOC must live next to the Army. It means that the ASOC must consistently train with the Army in realistic command and control scenarios. The scenarios must force the Air Force and Army to learn each others’ language and build a shared understanding of joint doctrine while learning to apply appropriate tactical procedures to a variety of combat contingencies. Good



relationships, the result of proximity gained from working together, are the glue that holds the joint operation together.

### **Realistic Training is the Key**

As previously shown, history has demonstrated that at the end of almost every conflict, the after action reports regarding the air-to-ground mission recommend that more or better communications were needed and improved air-ground training was necessary to more quickly achieve joint interoperability. Studies on the subject tend to make the same recommendations. Even so, the struggle to achieve joint interoperability is experienced in each successive conflict, often taking more than a year to achieve. In order for true interoperability to develop, proximity must be fostered in peacetime. This is accomplished by working together consistently, especially during realistic exercises. Although it may provide opportunity, simple collocation is not enough. A 1991 RAND study on the command and control of joint air operations observed that joint exercises are rarely joint in reality.<sup>139</sup> One reason that joint interoperability is often not achieved through army mission-focused exercises (where the ASOC is typically involved) is because the exercises are executed according to a doctrinal construct that provides more than enough artillery and air support to the ground commander, and there is very little deviation from the plan. When there is plenty of support without conflicting needs for air, it gives the ground commander and staff the mistaken impression that the ASOC exists to be directed by the army (it is actually subordinate to the air component commander). An exercise with an abundance of CAS aircraft and where all goes as planned is easy for the ASOC because the ASOC really exists for when the plan fails. In such cases, some entity must decide how best to allocate scarce resources. With regard to CAS, this is the purpose of the ASOC. Furthermore, when there is little urgency or decision-making required in an exercise, it makes it easy to overlook problems

in communication and joint operating mental models. On the other hand, when assets are scarce and subordinate commanders are simultaneously screaming for air support, shared understanding develops between ASOC and army command post members because such situations force precise definition of roles and responsibilities. There must be clear communication to define these roles and responsibilities. The language used must become more common. Well-designed exercises can improve shared language through experience. It is no secret that language differs from service to service. To become joint, the languages of each service must converge. All of this relates directly to proximity. In the end, it is not collocation that matters at the most basic level. What matters is joint experience gained through consistent, realistic peacetime exercise.

Because the ASOC is located at the army headquarters in both exercise and real life, it can be the catalyst for joint understanding, leading to joint interoperability. For this to happen, the exercises must begin to incorporate more unforeseen change. A high level of support must also be provided to make them realistic. Additionally, a sense of urgency is needed to add enough pressure to the system to make it combat-realistic. Although collocation may allow a Division ASOC to exercise more consistently with its aligned division, this ASOC will find it difficult to provide the support needed to make the exercise realistic enough to be beneficial for both services. Furthermore, unless the exercise is designed by an external agency as part of a bigger conflict, a division exercise simply is not large enough to provide much beneficial training to ASOC members. As a result, the army tends to get negative training. Misguided expectations develop about what the ASOC can do because the ASOC actually acts as a trainer (commonly referred to as *white cell*) for the army instead of a partner in the fight. Instead of helping future army commanders learn the doctrinal roles and methods of airpower so that they are ready to leverage available air support effectively in the next fight, they often get the idea

that the ASOC is always able to provide whatever air support they want, when and where they want it. Instead of simply being a part of exercises, the goal of the ASOC should be to implement a realistic capability in the training environment so that future army commanders get a clear understanding of what the roles, capabilities, and responsibilities of the ASOC actually are. It should be noted that the senior army officers likely to hold command during conflict tend to change units fairly often. Because of this, it is less important that the ASOC be collocated with a particular unit and more important that when an army unit trains with an ASOC, its commanders get a clear understanding of how the ASOC operates as part of the joint team.

It should go without saying that the ASOC members need to learn the army mission, methods, and language as well. If both of these are done in exercises, less time will be spent relearning the basics during war. Army commanders will realize during peacetime that executing according to the doctrinal construct from the beginning will actually expedite their ability to get CAS, instead of trying to directly control the aircraft allocated to them, as often happens as part of either a misunderstanding of the roles or simply a desire for control. The ASOC members will better understand the variations in the unique environment of conflict and be able to deviate appropriately from doctrine to rightly fit the situation. Perhaps most importantly, the relationship between the Army and the Air Force will not be adversarial because the ASOC will be free to focus on the mission instead of guarding its authority as the senior CAS command and control entity and protecting the sovereignty of the air component commander over airpower. The history of CAS shows that when these roles finally become clearly defined during conflict, they tend to conform closely to the prewar doctrine. By building proximity through exercises, these lessons can be learned during peace instead of war, and true joint interoperability can be realized between the Army and the Air Force. The ASOC should

therefore be aligned to maximize the quality of the exercises it takes part in, not simply to maximize the opportunity for face-time with Army personnel. Nevertheless, a combination of the two may be helpful.

### **Analysis of ASOC Division Alignment and the Need for Further Research**

Theoretically, the primary advantage of habitual division level ASOC alignment is that collocation provides a better opportunity for consistent interaction and relationship building with division staff than if the ASOC were aligned elsewhere. This advantage remains only as long as the division is most likely to be the senior tactical echelon in any conflict. More specifically, it is an advantage as long as the division will be the senior prioritization authority for land component fires during a conflict. If the division is not the prioritization authority, then the ASOC should not be habitually aligned with it. Additionally, in the case where there are parallel divisions in a fight, there should not be an ASOC supporting each division unless the airspace congestion, clearance of fires, and amount of CAS aircraft support are too much for a single ASOC to manage effectively. Otherwise, the command chains become unnecessarily long, slowing action. Aircraft are will have to be sub-allocated, reducing flexibility. The ASOC is presently designed to handle a corps-sized fight, and should maintain that capability as long as the possibility of U.S. military involvement in such a fight exists. Nevertheless, if the Air Force chooses to continue down the path of Division ASOC alignment, then there are several steps that must be taken to ensure that it is implemented successfully. To be clear, success in this case must be defined by how quickly joint air-ground interoperability is achieved in the conflict following full implementation. If there is little to no delay in interoperability, then success will have been achieved.

Developing a Division ASOC capable of success requires an individual analysis of each U.S. Army division mission to which an ASOC is to be attached. The aligned ASOC training and equipment design must then be tailored to meet the needs of the division mission it supports, while remaining capable of executing the corps mission. This may mean maintaining an organic long-distance communications capability – a reversal of program action directive 12-07 that is currently removing this capability from the ASOC.<sup>140</sup> For instance, for a lightly armed quick-reaction force, the organic communications capability should be maintained in order to reduce complexity and maintain flexibility. Such a mission would not require the large communications package currently planned. To remain capable, the ASOC should maintain its own full communications package in a reduced size. The 682nd ASOS has done extensive research into this possibility, and has found that they could field a small but sufficient capability that is easily deployed and requires few support personnel to manage. Their plan would result in a cost savings for the Air Force, even over the current planned support by external communications units.

In addition to analyzing how an aligned ASOC might fit in each unique division's mission, the division training plan must be analyzed to determine how to create quality joint training in available exercises. Because history has shown that simple collocation does not necessarily result in a better joint relationship, the division training cycle must be examined to determine how each uniquely designed ASOC can be integrated into division exercises so that quality training will be had by both sides. Quality training, in this case, is determined by how well the Army and Air Force members learn each others' mission, and how extensively the individual relationships develop. If the Division ASOC is capable of meeting the unique mission needs of its aligned division, can maintain the corps mission requirement, and can integrate in

division training effectively enough to result in successful joint execution at the beginning of any hostility it is asked to operate in, then it will fulfill the purpose of division alignment.

Once each division mission is analyzed and the required support determined for both implementation and training of each aligned ASOC, a cost-benefit analysis should be performed to determine if implementation of the Division ASOC is still feasible. This must be weighed against keeping a corps aligned ASOC that receives the same analysis regarding what it will take to create an effective joint team. Such a corps aligned ASOC would likely have to travel significantly to exercise with divisions, if the division remains the senior tactical echelon. In essence, the corps ASOC would have to become modular, consisting of several building blocks that could be tailored to a variety of mission needs. It must be able to provide an ASOC to the division it supports in each exercise, and may need to be capable of providing the white cell personnel to create a realistic training scenario as well. Each division mission would still have to be understood, planned, and trained for, but the total number of ASOCs could be reduced along with the total equipment and training facilities needed to support the ASOC. The cost-benefit analysis should weigh the cost of division implementation, including all the separate manning and equipment requirements, against the cost of maintaining a corps ASOC. This may be possible with a reduced equipment requirement because of economies gained from maintaining a larger ASOC contingent at fewer total locations. The corps ASOC temporary duty (TDY) travel costs to support division training would have to be analyzed. Division ASOC TDYs should be taken into account as well, because not all division training is accomplished on-site. There may also be currency requirements for Division ASOCs that can only be met by temporary duty at a location with a simulator, unless a robust simulator is developed at each Division ASOC location. Even if a simulator exists at each location, the requirement for instructors may drive

temporary duty travel because of the limited size and relatively fast turnover of ASOC personnel in the current construct. A cadre of instructors can be more easily maintained at a larger ASOC than a small one, because the total number of experienced personnel will typically increase in proportion to the increased size of the mission capability. All of these things should be considered in the cost-benefit analysis. Once complete, the Air Force should determine what course of action to take based on this analysis and careful consideration of what the needs of the future joint air-ground team will be.



## Conclusion

*Once the fundamental importance of centralized control of air assets is understood by both air and ground officers, the solution lies in not fighting over the control of airplanes used for close support, but rather in perfecting both the organization and procedures employed.*

*-Maj Gen (ret.) I. B. Holley Jr., Ph.D*

## Recommendations

Air Force leaders should determine whether to support the Division ASOC or withdraw it to the corps. As outlined previously, further research in the form of a cost-comparison analysis between corps and division alignment is needed to illuminate the options appropriately. Once the cost-comparison has been accomplished, the value of improved joint interoperability will need to be weighed against the costs associated with the most effective method of alignment. If withdrawn to the corps while still needing to support the division-focused modular army, the Air Force should build enough unit type codes per corps level ASOC to facilitate support to division training, continuity, and the ability to form several flexible-response mission sets for deployments and exercises.

Whatever decision is made, an updated vision and vector must be developed and articulated down to the Air Force squadron level so that ASOC units have clear direction about how to proceed with building their mission. Additionally, all levels of command must commit to the vision and vector. Gaining commitment across all levels is not a simple task, but can be accomplished by articulating a clear purpose and framework to the Airmen at each level. Military members want to be part of improvements to their force, but they must catch the vision before they will truly commit to an initiative that may place additional demands on their time (often at the expense of their tactical proficiency, as they see it). The air-to-ground control community is particularly wary of change because they are used to rotating leadership from



aircrew members who are only in an air support unit for two to three years before returning to their primary job. For change to be effective, the members of air support units must be convinced of the validity of the reason for the change and that a fully developed plan for implementation is ready for successful execution. The individuals chosen to lead the initiative should have broad air-to-ground experience and the ability to provide continuity throughout the implementation phase. Those responsible for spreading the vision need to do so through face to face interaction and by gaining ownership at each level. In other words, by flexibly leveraging the same principle of proximity that is central to ASOC success, the vision can be broadcast to the units effectively.

A mission analysis of each division along with an analysis of how the ASOC might best integrate into each division's training should be accomplished regardless of the decision about where to locate the ASOC, as long as the division remains the senior tactical echelon in foreseeable conflict. If the division does not remain the senior tactical echelon, then the corps training cycle should be analyzed for improved quality of integration. Additionally, the initiatives set forth in the *Air Combat Command Air Support Operations Center Strategic Vision* should be updated and carried to completion, in accordance with the decision about where to align the ASOC. When the elements of the strategic vision have been completed, then they need to be formed into a coherent, updated explanation and circulated at every level from the wing to the squadron. The goal should be to provide clear, executable guidance. If this is not done, then the intended improvements will not be realized.

### **Joint Interoperability**

The U.S. military is a better force when it works in concert than when it works as individual services. After all, unity of effort is the goal of any operation, and the reason why

unity of command is important.<sup>141</sup> Sadly, history demonstrates that unity of the air-to-ground effort is typically only achieved after extensive time working together, or when U.S. forces are in grave danger of being handed a major defeat.<sup>142</sup> If the ASOC is built to skillfully integrate the principles outlined previously, then it has the potential to be the linchpin for joint integration between the Army and the Air Force. The U.S. military should not wait until they are forced to be joint due to wartime demands. The ASOC needs to be analyzed as previously outlined by an experienced air-ground team to determine its future. If given the right equipment, training, guidance, and support, the ASOC can bring about effective joint integration during peacetime so that the services do not spend precious time and resources figuring out how to work together during war.

The *Air Combat Command Air Support Operations Center Strategic Vision* of March 2007 was a good start to improving the joint air-ground relationship because it provided a framework by which to develop the ASOC into a more capable modern mission set. It outlined the methods that were to be used to determine how to provide better airspace control capability at the ASOC, what analysis was needed to determine how to modernize it, how training would be developed and standardized, what manning was required, and what must be done to bring Air Force instructions and directives up to date.<sup>143</sup> Unfortunately, there has not been an updated version published since, and it is unclear what progress has since been made on the initiatives outlined in the vision. This vision needs to be reexamined, the previously outlined training and cost-comparison analyses accomplished, and efforts to support it enhanced. If the modular Army framework around which the vision was based remains valid into the foreseeable future, then it must be determined if implementing a Division ASOC to achieve better joint interoperability is worth the cost. The goal of these initiatives should be to build an ASOC that is flexible, has the

communications capabilities it needs to execute its mission, and can foster the proximity necessary to integrate quickly and seamlessly into the air-ground team, wherever it might be aligned. All of these actions will contribute to building a better ASOC, and more importantly, a better joint force to meet tomorrow's combat needs.

### Notes

<sup>1</sup> Air Force Handbook (AFH) 33-337, *The Tongue and Quill*, 27 May 2015, 59.

<sup>2</sup> Joint Publication (JP) 3-30, *Command and Control of Joint Operations*, 10 February 2014, 28.

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